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FACTORY WORKERS IN TANGKU

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PREFACE

A study of Chinese labour should properly begin with a general survey of the number, wage scales, working hours and standards of living of labourers. These are some of the fundamental facts urgently needed in this country. Circumstances, however, were unfavourable for conducting a survey of this kind when this Department first commenced its operations some two years ago. The country was then divided into a number of administrative areas under various militarist leaders and it was extremely difficult to obtain permission from them for any kind of serious study of labour. Except in districts under the jurisdiction of the Nationalist Government where a liberal policy toward labour was pursued, labour unions were all banned and any intercourse between an educated person and a labourer might entail danger to both. There was no governmental department from which information regarding labour could be sought, as none kept any full record of it. And it was equally futile to approach the proprietors or managers of factories who usually were reticent on the subject of labour, except when they complained of difficulties in their dealings with workers. In fact, labour was then a tabooed subject. Even a strictly theoretical discussion of it was hardly considered proper, as it was apprehended that it might be a propaganda of socialistic ideas in disguise.

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121 As the great majority of modern factories in this country are situated in the "foreign settlements" of various ports, we naturally turned our attention to them in our project of investigation. This again proved infeasible, as neither municipal authorities nor foreign factory managers were then in any way inclined to permit a "foreign" institution, that is, a Chinese institution, to look into what they considered affairs of their own. What right, indeed, had a "foreigner" to inquire into the working conditions of the thousands of his countrymen under their employ or jurisdiction? Under such circumstances, it is but natural that little could be done in regard to the study of Chinese labour conditions in general.

Though denied the opportunity of an extensive survey of Chinese labour, we were, however, fortunate in being able to conduct an intensive study of two factories of the modern type, the Chiu Ta Salt Refinery and the Yung Li Soda Works (or Pacific [162] Alkali Works) at Tangku. Tangku, it may be mentioned in passing, is an important town situated thirty miles southeast of Tientsin on the Pei-ho and about one-fifth of its total population, which is estimated at 5,000, is constituted by workers of the two factories. The result of this study is embodied in a Chinese report made by Mr. Sung-Ho Lin, the investigator, and the present report in English is an abridged translation of it.

121 466 We must confess that we were happy in the choice of these two factories and this for several reasons. First, both of them are among the very few industrial enterprises in this country that are organized as well as directed by men who are well qualified for the work. Disregarding for the present the factories owned and controlled by foreigners, we may say that the majority of Chinese-owned factories are run by men usually ignorant of the technique and implications of modern industry. This is not so with the founder and managers of the two factories under consideration, however. All of them have received technical education in colleges and what is more important, have gained valuable experiences in factories in Japan or the United States. Besides, they have realized that their business does not exist solely for

the purpose of profit-making but is a part of the gigantic process 121
of industrialization of this country. In other words, whereas 466
most of the Chinese industrialists usually start their enterprises with a lack of the necessary experience and knowledge which their work demands, those in connection with the factories under consideration are well equipped in both. Thus, if the former were blindly drawn to industrial pursuits, the latter entered into the field with a full consciousness of their knowledge and ability to adjust themselves and their activities to the environment. The difference between the two is certainly worthy of attention.

Secondly, the labour movement has in recent years begun to loom large on the horizon of the industrial world of this country, in spite of the stringent measures aganst it heretofore adopted by the militarist authorities and in spite of the oppressive policies pursued by factory owners or managers. In fact, the movement is gaining momentum at an amazing rate. It must be understood that if on the one hand, as is frequently alleged, a good deal of labour unrest has been due to agitation or extraneous pressure from radicals and communists, none can deny that on the other there are also genuine reasons for the dissatisfaction of the labourers and that their complaints, whatever they may be, must be looked into. As the ancient sage, Hsun-tze, says, "Worms breed only in things which have already become rotten," so no labour troubles could flourish unless the soil is already fertile for its growth and development. Now this is precisely what the managers of the two factories have anticipated and endeavoured to forestall. They believe that labour is a primary requisite in production and therefore it must be accorded due consideration. Our description of their welfare work forms an excellent illustration of the extent to which action has been taken by them in this respect.

That the managers of the two factories have always been eager 123
to find means to improve the lot of their workers may also be found in their desire to study the needs of the workers. Thus, during his stay at the Chiu Ta Salt Refinery from March to June 1927, our investigator was afforded every facility by the authorities of the 123
two factories to conduct his study. So long as they were not of a 127

[127] 123 nature which would divulge trade secrets, all the archives of the two factories were open for his inspection. He was allowed to live close to the workers' dormitory, to mingle freely with them, and to take part in their social activities. And last, but not the least, the investigator was asked constantly and in particular after the completion of his study to make recommendations on extending and improving their welfare work. Such a solicitous spirit shown for the well-being of their workers, it must be admitted, is but rarely met with in factories in this country.

511 Readers will find the conditions of living of the workers fully dealt with in the different chapters of this book. Whether the living standard of the workers is adequate will, perhaps, be viewed differently by many, but, at any rate, it may be admitted that it can by no means be compared with that in the West, particularly with that in the United States. Nevertheless, in a review of Chinese labour conditions, it seems necessary, first of all, to give due allowance to the general low standard of living of the Chinese. Now if the majority of our people are living in a poverty-stricken state, and are visited periodically with natural and more frequently with social and political catastrophes, how can it be possible to expect the industrial worker alone to enjoy an abundant life? Indeed one finds in the modern cities of this country, a semblance of opulence and extravagant living such as is usually found in industrially developed nations, but we need not go far afield before we discover tens and hundreds of thousands of people living in misery and privation. What about the lot of the teeming millions of agricultural workers in the country who are compelled to lead an existence, precarious and pitiably poor? This, be it observed, is not to say that the worker should be satisfied with his present lot, and that the employer may treat him in any way he likes. What is here maintained is that every advance in the worker's well-being must be preceded or accompanied by an uplifting of the general living standard and that his material welfare cannot be treated as a phenomenon in isolation.

(10) Again, it seems necessary, in the course of our discussion, to remember that there are also considerations other than labour.

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Under the present system of production, capital must secure its adequate share. If the worker demands high wages as well as general living facilities, the shareholder then has a right to expect high dividends also. Furthermore, nations being what they are, it appears that one should step on a plane higher than that of either the worker or the capitalist and look at industry from the national standpoint. It may then be urged with more reason that the development of national industries should be the first concern of all, while the interest of both the worker and the shoreholder should be subordinated to it. Consequently there are three distinct interests which the factory manager in this country ought to serve simultaneously. Although they are not necessarily directly opposed to one another, yet they are at times conflicting and it seems to be a gigantic task indeed, if one attempts to serve three interests at one and the same time and give full satisfaction to all.

China is now placed in a very peculiary position in respect to her industrial development. It is well-known that all imperialist powers are industrially strong and it is their industry and trade that uphold their supremacy. China, however, in her effort to develop her industries as a necessary means to attain her independent statehood, finds herself, on the one hand, to be lacking in such equipments as banking, transportation, telegraphic communication and other facilities, indispensable to the existence and development of modern industrial nations, and on the other hand, to be tied down by a net-work of treaties and tariffs, favourable to foreign manufacturers but detrimental to her own. While struggling against such handicaps, she is further confronted with such practices as price-cutting and dumping which foreign industrialists with many years' standing are in a position to resort to, in order to undermine the infant industries of this country which have just begun to strive to exist. Under such circumstances, there is no doubt that China should try to develop her industries by all means in her power. For only by making herself industrially strong can China expect to resist the rising tide of economic imperialism of the powers and to save herself from being a mere prey to their exploitations.

Our foreign critics are specially advised to grasp our view of

0010 looking at the Chinese labour problem from the national standpoint. While we fully recognize the predominant rôle of labour and the necessity of giving it its due share in the distribution of national income, we should nevertheless, make the development of industries a concern ahead of everything else. Indeed to give adequate remuneration to labour and to promote national industrial development at the same time are not incompatible; yet, when the existence of the nation's industry which is still in its infancy, is threatened by the unfair competitions of other countries, it is believed that it should be saved even at the temporary sacrifice of labour. This point, be it understood, is made not to justify the ill treatment received by Chinese workers in many of the factories in this country, but merely to show a possible happening in the course of industrial development here.

It is my duty to register our deep appreciation of the donation given by the Institute of Social and Religious Research, New York, which has made the survey possible. Mr. Fan Yuan-Lien, the late Director of the China Foundation for the Promotion of Education and Culture, must ever be remembered as being instrumental in introducing us to the two factories. To the workers and staff members of the two factories, we wish to express our hearty-felt thanks for their unfailing co-operation. Were it not for their invaluable assistance in various ways, the present survey could not have been accomplished. Lastly, we are indebted to Mr. F. C. H. Lee who drew up the questionnaires and took pictures for this book, to Mr. T. C. Jen who gave to the Department the service of translation and to Dr. Y. T. Tsur, Director of the China Foundation, who has read the manuscript and made many valuable suggestions.

L. K. TAO

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久大精鹽公司總廠

Chiu Ta Salt Refining Co., Ltd., Manufacturing Plant, at Tangku.

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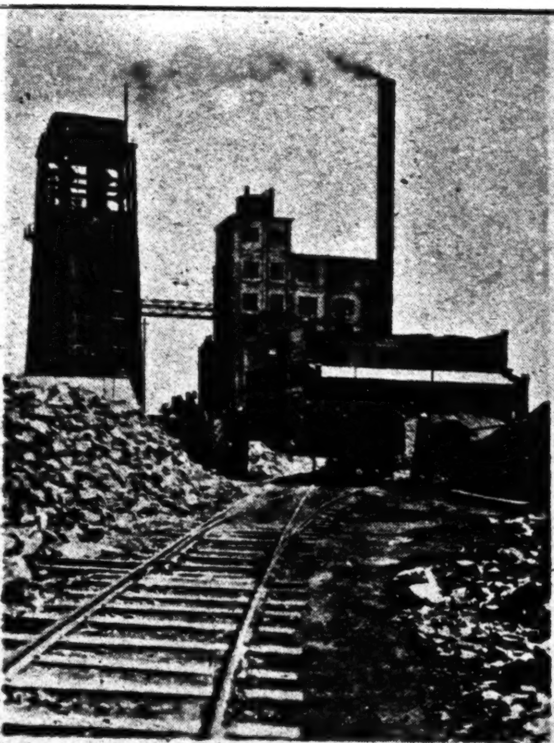

永利製鹼公司總廠

The Pacific Alkali Co., Ltd.,
Manufacturing Plant, Tangku.

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CHAPTER I

INTRODUCTION

I. METHOD AND SCOPE OF THE INQUIRY

The investigation of the Chiu Ta Factory workers was started in May 1926 and completed in the early part of July; that of the 50 Pacific Alkali Factory workers which immediately followed lasted three weeks. The latter investigation furnished supplementary material to the study of the Chiu Ta workers. Before the investigation proper began, a preliminary survey was conducted in three days, in order to orient the investigator in the new environment. Using this survey as a basis, three sets of schedules were then drawn up for the use of the investigation. The first set was in outline form, serving as a general survey of the factory in its salient features. The second set was intended for an intensive study of the resident workers, while the third was for the study of the families of the Chiu Ta workers living in Tangku. The schedules used in this inquiry for the study of the workers included mainly questions on the cost of living. While the social items were reduced to a minimum, particular emphasis was laid on details of income and expenditure.

The data of this investigation are derived mainly from four sources: (1) schedules of investigation, (2) records of the factory, (3) direct observation and (4) personal interviews. Data from the first two sources constitute the most important part of our material. Records supplied by the factory are undoubtedly reliable. As to the figures on the schedules, a reasonable degree of accuracy can be vouched for, as they have been verified by observation and study wherever possible. With regard to wages, the figures were checked by the factory records. Figures for expenses which appeared doubtful were checked either by re-examining the workers in question or through interviews with

12 their relatives or friends. It may be safely said that possible errors are thus reduced to a minimum.

There were 556 workers in the Chiu Ta Factory, and of this number, 420 were resident workers. Excluding the newcomers from whom it was impossible to obtain their income and expenditure for the last year, only 306 resident workers fell within the scope of our investigation. And from this number, 86 have been chosen and included in our sample. As a whole, the sample may be considered to reflect the general condition of the entire body of the Chiu Ta resident workers whose length of service was upwards of a year. As to the non-resident workers, 80 out of 136 families were chosen at random. But in the course of analysing these 80 schedules, only 61 families have been found serviceable for our purpose,

II. DIFFICULTIES OF THE INVESTIGATION

123 Explanation of Purpose.—In conducting a social investigation in China, it is necessary, first of all, to make known to the persons under investigation the purpose of the work and also the organization we represent, in order to avoid suspicion. To do this, however, is no easy task. First, the very title of our organization, "The Social Research Department of the China Foundation for the Promotion of Education and Culture" is a long and unintelligible epithet to them. Terms like "Education and Culture" and "Social Research" have to be fully explained. When the meaning of the terms has been duly conveyed, they seriously questioned the motives of collecting informations which seem to infringe upon their privacy of life. They also doubted as to what good such an investigation would produce. All these and other related questions had to be answered to their satisfaction.

Having made clear the nature of the organization whence he came, the investigator next had to explain to them his working terms like "cost of living," "working conditions," "surplus and deficit," etc. which are usually mere jargons to the workers and must be interpreted to them in their own language. It should be acknowledged that had it not been for the help of the administrative staff and the assistance of some of the enthusiastic and intelligent workers in the factory in explaining these terms to the majority of the factory hands, our investigation could not have been conducted as satisfactorily as it was. 123

Difficulties of Interview.—Another difficulty was encountered in the course of interviewing the workers. The interview could be done only during leisure hours of the workers, but such chances were often found rare. Night workers had to rest during the day, while day workers had to remain on duty. Even those who were off duty were not infrequently absent from their rooms, for they might be out. The investigator was so often disappointed to find none of them in the dormitory, although, at other times, he might come across a big group sitting and chatting in the dormitory room, all of whom, however, had already heen interviewed! To overcome these difficulties, personal interviews with night workers were arranged in the afternoon just before they resumed work, while interviews with day workers were usually carried on in the evenings. As there were changes of shifts every week in the factory work, it was found possible to secure information from both day and night workers when arrangements were made beforehand. 124

As has been noted, the workers were often found unable to understand the purpose of the investigation, much less to appreciate it. Before the investigator could obtain answers from them, it was necessary, therefore, to work up their interest in the subject by means of casual conversation. As soon as they showed some indication that they seemed to understand the purpose of our investigation, then questioning began. The investigation was generally conducted in such a way as to make the interviews extremely informal, appearing more like chatting than anything else.

The investigation of the families of the non-resident workers was even more difficult than that of resident workers. Whereas the latter all lived in the dormitory and could be easily located, the houses of the former were, however, all scattered about. In

124 fact, their houses were not even numbered and the rooms were invariably so small that the investigator could not possibly go in, while female inmates were there. Frequently their relatives or friends were asked to serve as guides, taking the investigator to the various houses. The time available for the investigation was rather limited, as the workers being mostly of the skilled class were generally only free at their respective homes from seven to ten o'clock in the evening. Needless to say, our purpose of making this investigation that was repeatedly explained to the resident workers had to be reiterated to the non-resident workers. It was a trying task to the investigator to have to listen patiently to the endless tales of the miserable families on the one hand and to be economical in time on the other, for any sign of impatience which he might show on his part would be interpreted to imply insincerity and lack of sympathy. Thus, the amount of time consumed in the investigation of one family was about one hour and a half which was often sufficient for investigating three resident workers. It may be argued that the time thus consumed might be spared, if the investigator could just call in those workers and question them instead of visiting them at their homes. But then it would deprive him of the opportunity to gain first-hand impressions on the living conditions of the workers at home. A careful examination of the home environment often disclosed to the investigator certain points which the worker either failed to report or failed to report accurately.

464 Irregularity of the Work.—With the exception of seventy-five
434 who were skilled, all the other workers in the factory were
511 constantly subject to change of employment, and, as a consequence, their cost of living must have changed also. Worker A, let us say, was engaged in salt manufacturing in March, and his expenses for food and clothing were rather high, as his income was increased to the amount of $4 or $5 a month. In June, however, he might be transferred to do the job of a watchman with a reduction of his wage and all his expenses had to be reduced accordingly. In November, he might again be called upon to pull coal cart. His expenses for shoes and socks might

be increased, but at the same time cart pulling would secure for 464
him a goodly amount of "salt bonus." The change in the cost 434
of living of such a worker is sometimes immediate and some- 511
times comes after a period of one or two months. To obtain absolutely correct figures of the yearly cost of living from such a worker is not only impossible for the investigator but also complicated enough for the worker himself, for we could hardly expect him to remember all his expenses in detail, while his economic conditions changed several times a year. It should, therefore, be stated that what we are presenting in this book is but a conservative estimate of the worker's average expenses for the preceding twelve months.

Question of Social Respect.—Traditions and customs in 123
China present a peculiar problem to the social investigator. The Chinese people are usually reserved, though often keenly sensitive to the treatment they receive. Whatever their station in life their dignity is to be respected at all times. It is, therefore, often a delicate matter to obtain reliable information from the worker without infringing too much upon his privacy or causing displeasure. In asking such questions as the age of a girl, value of one's property, debts incurred, articles pawned, etc. it is not only distasteful to the informant but also quite embarrassing for the investigator. In the case of re-investigation and confirmation, where the same questions had to be asked once over again, the situation was particularly delicate, for it naturally revealed our skeptical attitude, if not, our entire disbelief in the truthfulness of the previous answers of the informants.

III. LIMITATION OF OUR DATA

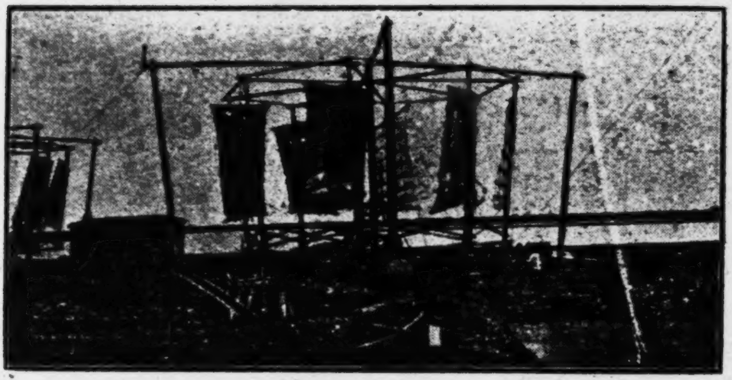
Business Secrecy.—It is generally known that no business 128
man is willing to give out certain facts of his business or the condition of his factory. And, of course, the factory under investigation is no exception to the rule. Inasmuch as the aim of our investigation is merely to find out the cost of living of the workers, only a general description of the factory will suffice

128 here to show the nature of the concern in which our workers were employed. Data which the Factory deems confidential have all been withheld.

464 Abnormal Period.—Political disturbances in the past few years have seriously affected the business of the factory. From 458 May to July 1926, three shops in the factory were one after another closed down, while only one was left in operation. During this period, production was greatly curtailed and chances for paying the salt bonus which certain workers would receive on account of their part in increasing the output of salt had necessarily become rather rare. The slump in the salt refining business undoubtedly brought unhappy consequences on the economic conditions of the workers. In normal years, workers generally devoted six months to manufacturing salt, while during the last year they worked only two months on it. The annual income of the salt workers was thus reduced by an amount of four months of salt bonus which is about $20 or about one-eighth of their yearly income.

125 Worker's Estimate.—On account of the generally low intelligence of the workers, not more than two or three in one hundred could keep their own account books. Figures on the schedules were all supplied by the workers and duly filled out by the investigator himself. As these figures were mostly obtained through cross-examination of the workers at various points and were also carefully studied later, they may be considered to have approached a high degree of accuracy. However, inaccurate estimates were still apt to occur. For instance, a worker might be told by a friend who had been investigated that certain questions were to be answered in certain ways, and in this case, the figures he gave for his own expenses would be more or less influenced by the advice of his friend. At other times, a worker would make use of another man's figures provided he found them serviceable. At still other times, a worker might base his expenses upon the figures of a few days, which he happened to remember rather than upon the average expense for the whole year. In the first case, the

worker's estimate was influenced by another man's opinion, /25
while in the two latter cases, by his own impression. Consequently, in no case could estimate be held entirely accurate. Such inaccurate reports, however, might be deemed insignificant, as they fell mainly in the items under miscellaneous expenses. As regards the main items of expenditure, such as food, clothing and shelter, the figures were constantly checked and rechecked, so that inaccuracies which we have mentioned have almost always been eliminated. It is more than possible that too low or too high estimates still remain but these, it may be presumed, might balance each other.



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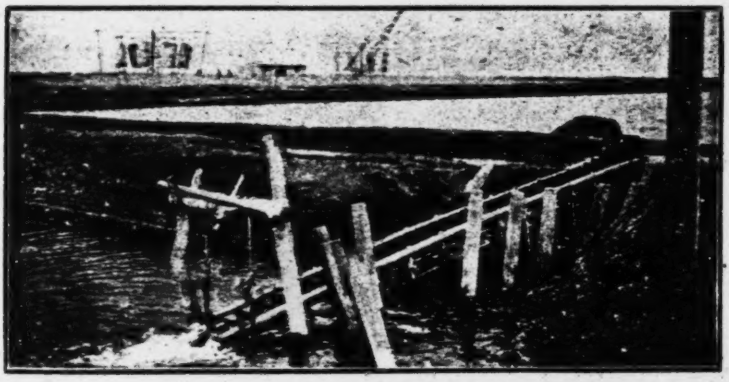
SAIL WINDMILL
PUMPING SEA WATER INTO THE SALT FIELD



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CHAIN-PUMP
FLOODING THE SALT FIELD WITH SEA WATER

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CHAPTER II

THE CHIU TA SALT REFINERY AND ITS WORKERS

I. GENERAL FEATURES OF THE COMPANY

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Its Origin and Development.—In the early years of the Republic, the Chinese government realizing the necessity of improving salt manufacture in this country, appointed a special commission headed by Mr. S. T. Fan to study salt industry and administration in the various countries of Europe. Upon his return in 1914, Mr. Fan engaged himself to promote a salt refining company and chose in Tangku, where salt-fields abound, a site for the factory. As free manufacture of salt has been prohibited in China, a permit had to be obtained from the Salt Administration for this purpose. The permit was duly granted and in 1916, the first factory for refining salt in China came into existence at Tangku. The capital of the Company originally subscribed was only $50,000 (silver); but it was later increased in 1918 to $500,000 and in 1926 to $2,100,000. In 1920, a special privilege was granted to the factory by the Salt Administration to the effect that within 100 *li* of the factory, no other salt refinery was allowed to operate. In this way the profits of the promoters of the Company have been safeguarded.

Organization of the Company.—The business of the Company is carried on by a general manager. He has under his control four departments and two subsidiary organizations. The former consists of the Business Department, the Accounting Department, the Manufacturing Department and the Managerial Department. The first two departments are located in Tientsin, while the last two in Tangku. The head of the Manufacturing Department serves concurrently as the manager of the factory and the two chiefs of the Managerial Department divide their duties

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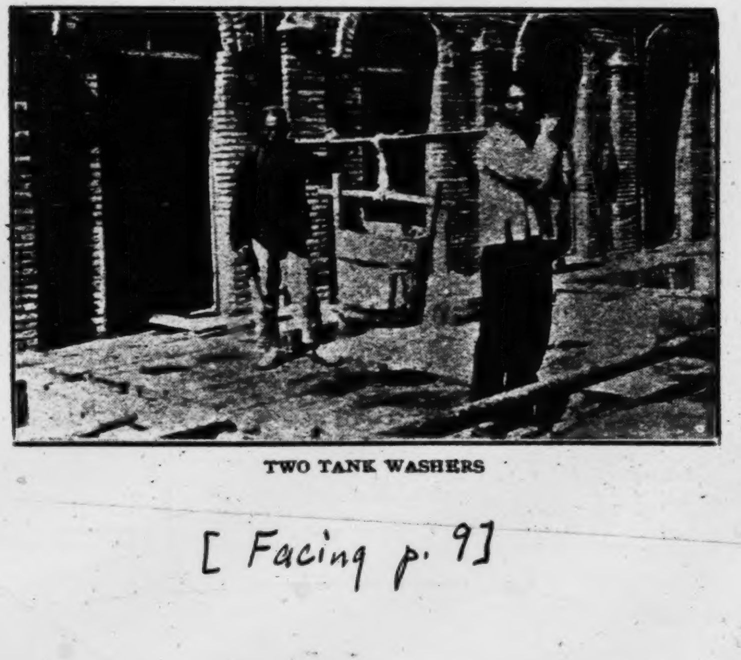
REMOVING REFINED SALT



TWO TANK WASHERS

[Facing p. 9]

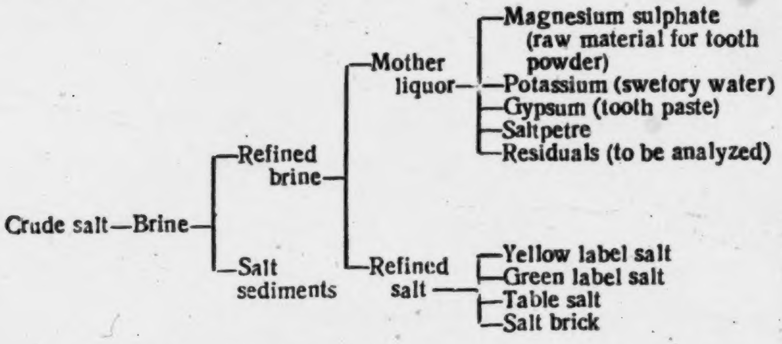
in looking after the east and the west sections of the factory. The two subsidiary organizations, (1) the Golden Sea Industrial Chemical Research Institute and (2) the Hospital, are attached to the factory, but they are autonomous in the matter of internal administration and the disposal of funds. The Research Institute was originally a chemical laboratory of the factory, but has since developed into an independent institution, supported with the funds donated by Mr. Fan, the General Manager of the Company who serves as the Director of the Institute. There are at present one department head and three research fellows actively engaged in industrial research work. It is true that the institute never had sufficient funds nor sufficient men on its staff, yet it must be said that it had already accomplished several highly useful and interesting projects along the line of chemical industry. At present, the research fellows are working on a method for the extraction of ephedrine and have attained a considerable degree of success. The hospital forms a part of the welfare work of the Company and it will be more fully treated in Chapter III.

The following diagram will give a clear idea of the organization of the Chiu Ta Salt Refining Company:—

- General Manager
  - The Golden Sea Industrial Chemical Research Institute.
  - Manufacturing Department
    - Iron Workshop
    - Salt and Coal Store Rooms
    - Salt Refinery
    - Power House
    - Carpenter Shop
  - Business Department
  - Accounting Department
  - Managerial Department
    - Transportation
    - Accounting
    - Records
    - Sundry Affairs
    - Store House
    - Workers
    - Dormitory
    - Salt-field Administration
    - Supplies
    - Dispatching of Goods
  - The Chiu Ta and Yung Li Factory Hospital

381 258 The Manufacturing Process.—The process of refining salt is rather a simple one. First, lumps of crude salt are dissolved in a ten-foot deep tank. The brine water in the tank is then filtered through sand and let flow into another tank containing a little lime so that iron compounds will be precipitated. It is next pumped into a high tower and then from the tower into a rectangular iron vat and is heated until it reaches 109° C. As the water gradually evaporates, white crystals of salt are formed. The mother liquor is then drained off through filtration. The crystals are then spread and dried on a huge *kang*[1] heated underneath, and ground into fine powder by means of a stone roller. After going through an electric sieve, the refined salt is then ready to be put into bags and sent to the market for sale.

The mother liquor which has been left over from salt-making contains many chemical compounds from which can be extracted saltpetre, magnesium-sulphate, gypsum and potassium. By mixing them with other ingredients, swetory water, tooth paste, tooth powder, magnesium carbonate and other articles are produced. The different processes of manufacturing salt will be made clear by the following diagram:—


Crude salt—Brine
Refined brine
Salt sediments
Mother liquor
Magnesium sulphate (raw material for tooth powder)
Potassium (swetory water)
Gypsum (tooth paste)
Saltpetre
Residuals (to be analyzed)
Refined salt
Yellow label salt
Green label salt
Table salt
Salt brick

381 317 258 The Production of Refined Salt.—The supply of crude salt in the two sections of the factory is drawn from two different sources. The east section which consists of two shops depends on the six salt fields of its own to supply the raw material. The

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[1] An oblong block of brick masonry.

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west section which consists of four shops has to buy crude salt 381 from Hanku, Shin-ho and Tangku. Tangku, which lies in the [317] Chiang-Lu salt monopoly district, has always been rich in salt production. With such conveniences as easily accessible water and railway communications, supply of raw material and transportation of manufactured goods at Tangku have been greatly facilitated. If the demand for refined salt is constantly increasing, the factory can easily work to the fullest capacity of its six shops. But unfortunately unstable and chaotic conditions which China has undergone in recent years have rendered the factory difficult, if not entirely impossible, of operation, not to say money-making.

The output of the two sections of the factory varies somewhat in amount and also from day to day. Because of the varying degrees of efficiency among the workers, due undoubtedly to a number of causes, no definite amount of production could be ascertained. But it has been fixed by the factory authorities that each vat should turn out from 120 to 180 bags per day, one bag weighing 150 kilograms. And according to the report of the chief of the managerial department, the maximum daily output has been 1,200 bags in the four shops in the west section and 800 bags in the two shops in the east section of the factory. The total output of these six shops, therefore, amounts to about 3,000 piculs[1] per day or about 1,080,000 piculs per year. On account of the unsettled conditions in the country which have resulted in frequent suspension of the work in the factory, the average amount of output has been reduced to 600,000 piculs a year. The sale of these 600,000 piculs of refined salt is left to the business department of the Company at Tientsin.

It may be recalled that the salt revenue of the Chinese 381
government has been pledged as security for the Reorganization 651
Loan of 1913, and the transportation and sale of salt has since 258
then been put under the supervision of the Salt Inspectorate. Consequently, the amount of crude and refined salt bought and

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[1] One picul is equivalent to 100 kilograms.

381 sold by the factory must, first of all, be reported to the Inspec-
651 torate and duties thereon paid accordingly. Upon the receipt of
258 the duties, permits are issued enabling the salt to be sold or
disposed of in the designated areas. The payment of salt duties
differs in the two sections of the factory. In the four shops of
the west section, the duty on crude salt is paid before it is taken
into the factory and another duty is paid again, when it is refin-
ed. In the two shops of the east section, however, salt is directly
shipped from the fields to the factory store and the two duties
are paid in a lump sum, when refined salt is made. Further,
while the refined salt of the west shops may be deposited in the
factory store house, that of the east shops must be deposited in
store houses designated by the Inspectorate. An agent of the
Chiang-Lu District Salt Inspectorate has an office near the Rail-
way Station for collecting the duties and supervising salt
381 removals. A large quantity of refined salt produced by the
438 Chiu Ta Factory is shipped to Tientsin, Shanghai and other
258 places, as the sale is limited only to trading ports. On account
of this restriction, the interior of China is denied the use of this
refined salt, unless it is sold by merchants who possess the right
of exclusive sale of that place. It has been estimated that Tien-
tsin and Shanghai take only 30 per cent of the annual production
of the Chiu Ta Factory, while the remaining 70 per cent is
largely absorbed in Hankow and Kiukiang.

381 The Place of the Chiu Ta Refinery Examined.—The Chiu
258 Ta Salt Refinery is a pioneer organization in this country in
developing the salt refining industry and improving the quality
of salt. Since its formation in 1916, all salt merchants have
begun to realize the importance of salt refining; and within a
period of less than eleven years, salt refineries have been estab-
lished one after another in several coastal towns. As a con-
sequence, the importation of foreign salt which has always been
duty-free has somewhat diminished. Further, the technical
experts of the Refinery have from time to time made improve-
ments in the process of salt refining. There is no doubt that
the Chiu Ta Company has performed a unique service in develop-

ing the salt industry of this country. 381

In addition to the improvements of salt refining, the staff of 258
the Research Institute has also worked out valuable results [816]
regarding the industrial uses of salt. Two industrial concerns,
the Pacific Alkali Works and the Po Hai Chemical Works, may
be said to be the offshoots of the Research Institute in that both
are making use of the results of its research and are developing
them along commercial lines.

It should be pointed out that the supply of crude salt pro- 381
duced in Tangku and its neighbouring districts has always been
in excess of its demand. Take Hanku for an example. Its 433
productive capacity per year has been 4,000,000 piculs, while 258
only one-half of it is actually sold. The sheer waste attendant
upon salt production in this country is certainly astonishing. It
has also been estimated that 800,000 piculs of mother liquor, an
important by-product of salt have been thrown away every year
without any recognition of its value. If the Research Institute
could continue to work on the industrial utilization of salt, as it
has already done in making possible the establishment of the two
companies—the Pacific Alkali Works and the Po-Hai Chemical
Works—it would not only help solve the problem of turning to
good account the enormous amount of salt which would otherwise
be wasted, but also confer an enormous benefit on the multitudes
of salt producers throughout China by giving them livelihood.

The town of Tangku has experienced during the last thirty 504
years several vicissitudes. The year 1898 marked the beginning
of a phenomenal growth, for in that year the riverway leading
from it to Tientsin was blocked by silting to such an extent that
steamers of over one thousand tonnage had to lay anchor at
Tangku where loading and unloading of goods were effected.
The town at once found itself flourishing and prosperous, for
what had been originally a mere outer port now became the only
important gateway of North China. In 1900, however, came the 727
Boxer Uprising. Being the main entrance to Tientsin and Peking,[1] 504

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[1] Now changed to Peiping by order of the Nationalist Government.

727 the town was the first to suffer from the heavy cannonading 504 of foreign troops. It was practically demolished by gun-fire and the inhabitants of Tangku had to flee for their lives and seek refuge in distant villages. In fact, what they had saved were only their lives, for whatever they had, homes as well as properties, were either pillaged or destroyed. Then the French, Japanese, German and Russian troops seized huge tracts of land along the river for the building of barracks to house their garrisons. Except the Germans and Russians, the French and 504 Japanese hava retained possession of the land ever since. In the meantime, the port of Tientsin again became accessible to ocean-going steamers. In those years, the town of Tangku suffered a decline from which it has never recovered. The appearance of the Chiu Ta Factory, however, has contributed greatly to the development of Tangku. At least in its immediate neighbourhood, roads and bridges have been built and an electric plant installed by the Factory. Towards education, police and welfare work, it has also contributed its share. It is no exaggeration to say that the Chiu Ta Factory has been a civilizing influence in this once decrepit town and it has promoted its material as well as spiritual progress. In the summer of 1927, the river route to Tientsin wos again blocked by silt and Tangku has once more become the port where goods and passenger traffic to and from Tientsin must pass through.

II. WORKERS OF THE CHIU TA FACTORY

463 Classification of Workers.—The workers of the Chiu Ta Factory fall into two classes, common labourers and skilled labourers. The latter may be further distinguished as (1) skilled labourers, (2) semi-skilled labourers and (3) apprentices. The skilled labourer has been trained either in the factory or in some other place. The semi-skilled labourer is generally recruited from among common labourers, but he is required to assist in skilled work. He is accorded the same treatment as the common labourer, only his wage is increased more frequently; and being engaged in more or less skilled work, he could gain knowledge

and experience of a technical nature. Apprentices are employed 463 from time to time by the factory to be trained by skilled labourers. The term of apprenticeship is three years; but at the end of every year, they are examined. When the term of apprenticeship expires, they are promoted according to merit to the skilled class. The workers of the power house and iron workshop are regular 464 labourers of the factory, but in the carpenter shop, apart from the regular labourers of the factory, additional labourers are occasionally employed for short periods in busy seasons. These labourers are paid daily and their nnmber is determined by the amount of work required in the factory. Masons and coolies are also employed from time to time and paid daily. These three classes of workers together with the coolies and servants of the Golden Sea Industrial Chemical Research Institute and of the Hospital are not placed on the permanent list of workers of the Chiu Ta Factory and, therefore, they do not fall within the scope of our investigation.

Workers in the factory are not graded into definite classes. 381 For instance, a worker may be assigned to direct other workers, 466 in order to speed up their work, but he is not supposed to be their foreman. In fact, no such title is known in the factory. He 258 who directs the workers is given authority only during the working hours, while at other times, he is but one of their equals. All the workers have access not only to the administrative staff, but also to the chief of the managerial department. In case of any difficulty arising between the management and the workers, the chief of the department would interview the workers and exchange opinions with them. In this way, disputes, if any, are easily and amicably settled.

The factory is divided into six sections: (1) the west section of the refinery, (2) the east section of the refinery, (3) the iron workshop, (4) the power house, (5) the dormitory and (6) the salt field administration. Workers of the last four places are under the direct control of their respective administrative staffs, while workers of the salt refinery are under their own supervisors. At the end of every month, the workers are graded

381 according to their efficiency into three classes: superior, medium, 466 and inferior, and reported to the managerial department by the supervisors who are on the staff of the management. Increase of 258 salary, distribution of bonus and dismissal of workers are all based upon this report. The chief of the managerial department, whenever he finds it necessary, conducts a personal investigation of the workers, so that no injustice is intentionally done to any body.

381 258 Number of Workers.—The number of workers in the factory varies from time to time and is determined by its business conditions. In the prosperous year of 1925, there were 660 workers. During these years of general unrest and business depression, however, the number of workers has been reduced to about 500. The factory records of April 20, 1927, show that the number of workers was 556. They were distributed in the various sections of the factory as follows:

Table 1.—Number of Workers in the Various Sections of the Factory

Section	Number of workers	Per cent
West Section	262	47.1
East Section	207	37.2
Iron Workshop	45	8.1
Power House	15	4.0
Dormitory	22	2.7
Salt Field Administration	5	0.9
Total	556	100.0

The workers may also be classified into the skilled and the common thus:—

Skilled labourers	75	13.5%
Common labourers	481	86.5%

464 Length of Employment of the Workers.—Table 2 shows the distribution and percentage of the 556 workers according to their length of employment in the factory. As a rule, the number of workers varies in inverse proportion with the number of years:

there is a gradual dwindling of workers as time goes on. But as the recruiting and to a much less extent the discharge of workers fluctuates every year, a departure from this rule may be seen in this table. It is noteworthy that 21.9 per cent of the workers entered the factory for a period of less than a year; this figure may also be taken as the usual rate of labour accession in a normal year.

Table 2.—Length of Employment of Workers in the Factory

Length of employment	Number of workers	Per cent
Under 1 year	122	21.9
1 year and under 2 years	39	7.0
2 years and under 3 years	76	13.7
3 years and under 4 years	53	9.5
4 years and under 5 years	45	8.3
5 years and under 6 years	85	15.3
6 years and under 7 years	46	8.3
7 years and under 8 years	29	5.2
8 years and under 9 years	29	5.2
9 years and under 10 years	23	4.1
10 years and under 11 years	5	0.9
11 years and under 12 years	2	0.4
12 years and under 13 years	1	0.2
Total	556	100.0

Nativity of the Workers.—Facts concerning the nativity of the 556 workers were clearly and reliably stated in the factory records. But as the latter were not accessible to the investigator, only a rough estimate of it is herein attempted, based upon talks with old-time workers and factory authorities.

In 1927, most of the workers came from Shantung, Chihli and the Metropolitan District. Shantung had the largest number, comprising nearly 50 per cent of the total number of workers. Chihli ranked second, comprising nearly 40 per cent and the Metropolitan District, the third, comprising 7 per cent. The rest

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464 came from Honan, Shansi, and other provinces.

Shantung is one of the most densely populated of our 464 provinces. Even if its inhabitants have not been visited with famine, flood, banditry and warfare in recent years, they have, 166 however, been regularly moving out to other provinces. Many of them go to Manchuria to seek a living; but a goodly number is drawn to wherever labour is needed. Now what the Chiu Ta Factory particularly needs for its salt refining work is exactly such hardworking and industrious people as Shantung supplies. And this explains the presence of a Shantung majority among the workers of the factory. The demand for work by Shantung emigrants is certainly an astonishing phenomenon in this country at present. In February 1927, when the news that two or three new operatives were needed in the factory becames known to the workers, some 400 Shantung people lined up at the Tangku Station, applying for work. Among the Shantung workers, those from Tingchow, Tsaochow and Wuti constituted the great majority.

464 The workers from Chihli come next in number. First, natives of Tangku formed a great number of the skilled workers in the iron workshop and the power house. They were often recruited from the workers of a dockyard on the opposite bank of the river, where they had either received training or working experience. Few natives of Tangku cared to be common labourers at the factory, because they could easily earn a livelihood by being coolies at the wharf or in industries connected with fishing or salt-drying. The demand for wharf labourers and rickshaw coolies has been materially increased since last year when Tangku became a port of North China. Secondly, almost all the carpenters of the factory came from Shen Hsien, Chihli, a place noted for carpentry work. Such districts as Tientsin, Ching-Hai, Yenshan, Tung-Kuang were also represented among the workers, either because of territorial propinquity or of some other reason.

People of the Metropolitan District who can neither endure hardships like the Shantung people nor excel in skilled workman-

ship likes the natives of Tangku, were mainly employed in the 464
work of management.

Age of the Workers.—No reliable data exist to show the ages of the workers. However, it may be said that most of them are young and strong. As salt refining work requires robust and healthy men, it is stipulated by the factory that in the physical examination of the applicants for work, old men will not be admitted. There were, at the time of our investigation, only 4 or 5 men over 50 and only 12 apprentices under 18. The remaining 540 workers were from 18 to 50 years old. Of this number, about three-fourths were between 20 and 35 years of age. The age of the newly recruited workers, on the average is about 20. Among the latest batch of recruits, the average age seems to be still lower.

Families of the Workers.—Since most of the workers are young and have come from afar, it would be interesting to study how many of them had families with them at Tangku. According to the factory records of three years ago, only few of the workers brought their families to Tangku. During the last two years, however, the number has gradually increased. In the winter of 1926, the number of workers' families increased from the neighborhood of 70 to 136. The total number of the workers having families distributed in the different sections of the factory is shown in Table 3.

It may be noticed in the following table that among the workers in the iron workshop and the power house, a much higher percentage had families than among the others. It seems that two reasons may be advanced to explain this fact. First, men in the iron workshop and the power house are mostly skilled workers and are natives of Tangku; consequently their families have already been there. Secondly, the skilled workers are, as a rule, more highly paid than the common labourers and they can afford to maintain families which are in Tangku already, or have lately been brought over from their native districts. But within the last six mouths, there happened, it was reported, an increase of fifty families over and above those which had already come there at Tangku. The reason for this sudden increase of the workers' households, however, differs from what we have just stated regarding the skilled workers. First of all, as certain parts of Shantung and Chihli have not only become entirely unproductive but unfit to live in on account of disorder and warfare, families living there had to move out and join their own people working in towns. Secondly, owing to the general rise of prices, the cost of living has gone up enormously. While, in previous years, the workers might have savings to send home to support their families, now they would use up their earnings entirely for their own subsistence. Once their contributions are cut off, the people at home would find it necessary to quit their homesteads in order to join them. These relatives after their arrival would press the workers for money or they would squeeze a living out of what the workers could earn. At any rate, the rise in the cost of living, (or to put it in another way, the fact that the rise of wages lags behind that of prices) tends to shift the family from the country to the town, where one of its members is working. Viewed from this aspect, the increase of the workers' families at Tangku can hardly be taken as a sign of prosperity.

Table 3.—Workers having Families at Tangku as Distributed in the Various Sections of the Factory

Section	Number of workers	Workers having families	
		Number	Per cent
West Section	262	59	22.5
East Section	207	37	17.9
Iron Workshop	45	26	57.9
Dormitory	22	5	22.7
Power House	15	10	66.7
Salt Field Administration	5	1	20.0
Total	556	136	24.8

Rate of Turn-over.—There is no definite date for admitting new labourers, but it usually happens at the end of the year or in February, when a number of workers is discharged. Recruiting of workers does not require any publicity, as once the news is 464 known to the workers, the latter would introduce their acquaintances and friends who were looking for work. The applicants are given a physical examination and their age must be around twenty. If the above requirements are met and on furnishing a guarantor as well as expressing their willingness to observe the regulations of the factory, the workers are admitted. They are usually discharged on the recommendations of the supervisers in February and July, but more frequently in July. On the average, the number of dismissals is around 20 a year. In recent years, however, it has decreased considerably through better management. From July 1926 to June 1927, only five workers were dismissed in the east section. Those who quit for family reasons or out of their own will are usually about 20 a year. The occupations the workers follow after leaving the factory are said to be as follows: farming 60 per cent, small business 20 per cent, other kinds of work 20 per cent.

The work of the common labourer is subject to frequent changes. Even the skilled labourer is only confined to tending the electric plant or making spare parts for simple machinery. As the work of salt refining is of such a nature that only strength and endurance are required, repetition of the same work does not necessarily give rise to efficiency. Thus, in the factory, change of work is a rule rather than an exception. It is unfortunate that we are unable to analyse the change of jobs among the workers, as the records concerning it are not accessible. What we could secure is limited only to the change of workers. According to a statement made by a chief of the managerial department, the annual rate of replacement is about 8 per cent of the total number of workers in the factory *i. e.* the number of dismissals and admittances is about 40 each a year. But it seems that on account of the irregularity of work in the factory during the last year, the rate of turnover must have been still higher.

Different Kinds of Work.—The work in the Chiu Ta Factory 463 may be divided into the principal and the subsidiary. The 381 principal part of the work is confined to salt refining. The

463 subsidiary part of the work that is, any work other than salt
381 refining, is rendered by both skilled and unskilled labourers. The skilled work includes the manufacturing of iron and wooden implements and the operation of the electric plant, while the unskilled work consists in transporting and storing products and other miscellaneous work including service and attendance. A detailed list of the various kinds of work is shown in Table 4.

466 The work, as a whole, is of a safe nature, and does not involve any serious danger to life. The principal work, which consist of dissolving, boiling and baking salt, carrying coal, attending to the furnace and washing salt tanks, requires physical strength. Workers with a weak constitution are liable to fall ill, especially in winter and summer. For instance, the salt boiler is apt to catch cold, after emerging from the heated room, as he has profusely perspired after serious exertions. The work of the firemen, though uncomfortable enough in summer, is rather light as compared with that of other workers. In the work of baking salt, its smell is choking. In summer the hot kang makes the temperature in the room unbearably high. This may be one of the reasons why salt bakers very frequently ask leave of absence in summer. Washing salt tank must be an unpleasant job in winter, as the hands of the worker constantly exposed to the icy cold salt water, are apt to get chilblains. There is, however, one advantage in these kinds of salt refining work, as none require continuous hard work and workers may rest at intervals.

Working Hours.—From 1916 to February of 1927, the common labourer worked 12 hours and the skilled labourer, 10 hours a day. But the eight-hour day has been adopted, since March 1927 in all kinds of work, excepting those to which the system cannot very well apply. In accordance with the nature of the work, labourers have been arranged in shifts. For the salt refining work, for instance, three shifts of men are necessary, but the blacksmiths and apprentices have only one shift, who work from 8 to 12 in the morning and 1:30 to 5:30 in the afternoon. The

Table 4. Working Hours of Various Kinds of Work in the Factory

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Kinds of work		Number of shifts	Hours per Shift
Principal work	Salt-boiling	3	8
	Salt-baking	3	8
	Firemen	3	8
	Salt-dissolving	2 or 3	8
	Pulling coal carts	1, 2 or 3	8
	Tank-washing	1	8
Subsidiary work	Firemen (power house and steam Engine)	3	8
	Electric plant	1	8
	Iron workshop	1	8
	Carpentry	1	8
	Store room	1	8
	Recorder	1	8
	Supply department	1	8
	Sundry jobs	1	8
	Bath room	1	10
	Tea kettle keeper	2	12
	Cook	2	12
	Watchman	1, 2 or 3	6, 8 or 12
	Dispatching goods	1	indefinite
	Servant	1	indefinite

three shifts are divided as follows: (1) 6 a.m. to 2 p.m. (2) 2 p.m. to 10 p.m. and (3) 10 p.m. to 6 a.m. A change of shift is effected once every week by switching the first shift to the third and the second to the first; this would allow men in the first shift to rest 32 hours, known as "the big rest" and men in the second and third shifts to rest eight hours. The two shifts are divided between (1) 6 a.m. to 2 p.m. and (2) 2 p.m. to 10 p.m. Exceptions to the eight-hour day are found as follows: 466

(1) 12-hour day; the change of shift being made twice at 6 a.m. and 6 p.m.

(2) 6-hour day for those whose work is particularly heavy. The two shifts work from 6 a.m. to 6 p.m. and the change is affected at 12 a.m.

(3) 10-hour day from 1 p.m. to 10 p.m.

(4) Working hours indefinite for the servants and porters.

The eight-hour day has already been effected for five months and the result is found to be quite satisfactory. The number of workers remains the same, but the output has not been diminished, as shorter hours of work have resulted in increased efficiency. To the workers, however, this change means a great deal, for they could find sufficient time to rest and seek recreation such as reading, sports, exercise, etc.

Holidays and Leaves of Absence.—There are eight and a half days' holiday in the factory in the whole year, viz. 5½ days during the old Chinese New Year, 1½ days at the Dragon Festival and 1½ days at the Mid-Autumn Festival. Sundary are not observed as rest days. The salt manufacturer as has been mentioned enjoys a long rest of 32 hours once every three weeks. Among those working under one shift and two shifts systems the longest stretch of rest is generally 16 hours.

Workers may ask leave of absence under any of the following conditions: (1) marriage (2) funeral service (3) sickness (4) accident and (5) ordinary business. The leave of absence for marriage or funeral service is granted to the extent of 30 days during which wages are paid as usual. Any day in excess of this limit is counted as absence for ordinary business, in which case the pay will be deducted accordingly. As to absence resulting from sickness or accident, the time limit is to be decided upon by the factory physician according to the seriousness of the case, no deduction of wages being made during the absence. Special considerations are given to invalid workers. Those who ask leave for ordinary business are not paid wages, and if their absence exceeds one month, even the extra month's pay at the end of the year is reduced in proportion to the days of absence. 466 Those who do not return in two months after their time limit expires are considered as honorably dismissed, but old-timers may be re-admitted, if sufficient reasons are given. Persons asking leave of absence for ordinary business may renew it for marriage or funeral service, and the renewal allowing the worker to draw his pay in the meantime up to one month is counted from the day when the letter to such effect is received. Apprentices are not allowed any leave of absence for ordinary business. New workers who have been in the factory for less than three months are not paid any wages during absence, no matter what the reason may be. Persons engaged in principal work, once absent for whatever reason, are irrevocably demoted to the class of piece job workers on their return. They are allowed to do their former work only when there are vacancies to be filled up. According to our conversation with the supervisers and workers, absence due to ordinary business is the most frequent, while sick leave comes next to it. The former generally happens around Arbour day and Old Chinese New Year, when workers visit their homes, while the latter occurs mostly in summer and winter, when work seems particularly hard. The number of times, the 289 workers in the west section have asked leave of absence in the course of the year 1926 is classified in Table 5.

Wage payments.—Wages are paid either according to the 465 number of days or according to efficiency. The earnings of the worker may be said to consist of six items: (1) wages (2) extra month's pay (3) general bonus (4) salt bonus (5) allowance for working over-time and (6) commutation of seasonal gifts.

Wages are paid monthly to workers irrespective of the number of days in each month. Wages of common labourers vary from $8.25 to $16.75, while those of skilled labourers, from $8.75 to 31.75. Apprentices are paid from $4.75 to $8.75 (see Table 6).

The minimum wage in the Chiu Ta Factory was formerly fixed at the rate of $2 a month, but meals were provided for by the factory gratis. Owing to the gradual increase in the number

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Table 5.—Distribution of Leaves of Absence of Workers in the West Section of the Factory in 1926 according to Their Nature

Month	Ordinary business	Sickness	Marriage	Funeral service	Accident	Total
January	10	6	1	1	—	18
February	31	1	2	—	2	36
March	28	5	2	1	—	36
April	38	15	1	—	—	54
May	25	7	1	1	1	35
June	22	9	—	—	—	31
July	12	12	—	—	—	24
August	11	21	—	—	—	32
September	18	15	1	3	—	37
October	18	3	—	1	—	22
November	18	5	1	—	1	25
December	12	12	1	2	2	29
Total	243	111	10	9	6	379

465 of workers, however, it was soon found inconvenient to provide meals for all and their wages were, therefore, raised to $6 per month each without meals. The rise of prices during the last four or five years has again made it necessary to raise the wages still higher by fixing $7.50 as the lowest monthly rate. It had been the practice of the factory to present every year two suits of clothing and some edibles to its workmen at festival times. Later it was considered rather troublesome to purchase the presents for the increasing number of workers and they were commuted since March 1927 into an amount of $0.75 a month or $9 a year to be paid to every worker. This brings the minimum rate a worker could receive to $8.25 a month. The apprentice, who is also benefited by the gifts, has therefore his wage raised from $4 to $4.75 a month.

Wages are increased in July but more frequently in February every year. The scale of increase was originally $.0.25, $0.50, $0.75 or $1.00 for the common labourer and $0.50, $1.00. $1.50 or $2.00 for the skilled. With the increase in the cost of living,

8: Lin E-5 (1927)1928 AF12 North China AF12

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Table 6.—Number of Workers in Six Sections According to the Wage Scale of the Factory

Monthly Wages*	West Section	East Section	Iron Work shop	Power House	Dormitory	Salt Field Administration	Total number of workers
$ 4.75	1	—	2	—	—	—	3
5.75	1	2	8	1	—	—	12
6.00	1	—	—	1	—	—	2
7.00	—	1	—	—	—	—	1
7.75	—	—	—	1	—	—	1
8.25	73	49	—	—	2	—	124
8.50	1	—	—	—	—	—	1
8.75	17	49	2	1	1	1	71
9.00	24	8	1	—	1	—	34
9.25	11	10	—	—	1	—	22
9.50	10	15	—	—	2	—	27
9.75	8	4	3	—	2	—	17
10.00	11	14	—	—	1	—	26
10.25	23	9	2	1	—	—	35
10.50	8	7	—	—	1	—	16
10.75	6	6	5	1	3	—	21
11.00	8	5	1	1	1	—	16
11.25	7	2	—	—	2	—	11
11.50	7	1	2	—	1	2	13
11.75	7	2	1	1	—	—	11
12.00	2	6	1	—	2	—	11
12.25	8	2	—	—	1	—	11
12.50	3	2	—	—	—	1	6
12.75	3	4	2	—	—	—	9
13.00	2	1	—	—	—	—	3
13.25	2	1	1	—	—	—	4
13.50	1	—	—	1	—	1	3
13.75	1	2	—	—	—	—	3
14.00	2	1	—	1	1	—	5
14.25	2	—	1	—	—	—	3
14.50	3	1	1	—	—	—	5
14.75	1	—	1	—	—	—	2
15.00	1	1	—	—	—	—	2
15.50	1	1	—	1	—	—	3
15.75	2	1	—	—	—	—	3
16.75	4	—	1	—	—	—	5
18.00	—	—	—	1	—	—	1
18.25	—	—	1	—	—	—	1
18.50	—	—	1	—	—	—	1
18.75	—	—	1	—	—	—	1
19.25	—	—	1	—	—	—	1
20.00	—	—	—	1	—	—	1
20.25	—	—	1	—	—	—	1
22.25	—	—	1	—	—	—	1
22.50	—	—	1	—	—	—	1
23.00	—	—	—	1	—	—	1
23.25	—	—	1	1	—	—	2
24.25	—	—	1	—	—	—	1
31.75	—	—	1	—	—	—	1
Total ...	262	207	45	15	22*	5	556
Average...	$ 9.97	$ 9.57	$ 12.47	$ 13.28	$ 10.55	$ 11.55	$ 10.15
Median ...	$ 9.50	$ 9.00	$ 10.75	$ 11.50	$ 10.50	$ 11.50	$ 9.50

* Including the commutation of gifts

465 the minimum increase in wage for the common worker is $0.50 and for the skilled, $1.00. Those who have been in the factory for less than one year are not entitled to a raise in wages. The apprentices' wages are increased only after they have passed an examination successfully. On the expiration of their apprenticeship, their wages are increased $4 or $5 according to their merits.

Every worker is entitled to an extra month's pay at the end of the year except those who have been absent over a month, in that period of time. Those who have worked in the factory for less than one year are entitled to a fraction thereof. Both the wages and the extra month's pay vary according to the length of service and are subject to a raise each year.

General bonus is paid to every workman according to efficiency at the end of the year. The amount varies from $0.30 to $28. It is based entirely upon the efficiency record kept by the supervisers irrespective of other considerations. A new comer generally receives an amount of $10 a year for his general bonus, sometimes, it may be more but it never goes beyond $20. For those who have been in the factory for more than 2 years the general bonus is frequently more but it never exceed the sum of $28. The general bonus differs from the dividend, in the fact that, while the latter is contingent upon the profits of business, the former is a reward to the workers without any regard to the profits of the company.

Salt bonus commonly known as "bag money" is given to the principal workers and the firemen of the steam engine with a view to encouraging the output of the refined salt. After sufficient test with different kinds of vats, the factory has fixed a minimum amount of salt production for every vat. For one bag in excess of the minimum amount, 10 cents is awarded to the salt boiler, the salt baker, the firemen and the coal carrier. Thus, each worker usually receives the salt bonus from $4 to $7. To the salt dissolver, tank washer and firemen of the steam engine, however, only 5 cents is awarded as salt bonus for every ten bags of salt produced in excess of the minimum amount.

As a rule, each worker receives from one to two dollars a month over and above his regular wage. The total amount of salt bonus, accumulated in one month is distributed at the beginning of the next month to the workers according to the number of days each had worked. Labourers, as a rule, are willing to work on salt refining, as they desire to receive the salt bonus which amounts sometimes to as much as their wages.

Allowance for working over-time seems to be quite liberal. It is two days' pay for eight hours' over-time work, one day's pay for 4-6 hours' over-time work, and half day's pay for less than 4 hours' over-time work. The allowance is to be given the next day. Chances for working over-time are not many except under the following conditions; (1) during new year holidays (2) to make up the work of those who are absent unexpectedly and (3) extra work in the iron workshop. The benefit of getting over-time pay is thus only limited to a small group, and excepting the foundry work, the maximum number of days that a common labourer can work over-time in a year is only 8½. Consequently, the income derived from over-time pay is rather insignificant.

It may be interesting to have an idea as to how much a new worker can get. On entering the factory as a common labourer, he is entitled to $7.50 a month, or $90 a year. Added to this $9 of commutation money for the new year and seasonal gifts, one extra month's pay of $7.50 and $14 of general bonus, he makes $10.04 a month or $120.50 a year. If he happens to work in refining salt for 3 months, he would then get $5 each month as salt bonus. Thus, his earnings would amount to $11.29 a month or $135.50 a year.

CHAPTER III

WELFARE WORK OF THE CHIU TA SALT REFINERY

I. THE LIVING QUARTER OF THE WORKERS

362 466 When the Chiu Ta Factory was first established, a few houses were reserved for workers to live in, free of charge. As the number of workers increased, a regular dormitory was built in 1924, in which 40 rooms were available for their use. The arrangement in all the rooms is more or less similar. Each room accommodates 12 persons and is furnished with chiffonier a board table, chairs and even tea sets. The men are free to choose their own room mates, so that acquaintances and friends may feel at home in living together and the management of the dormitory was thereby greatly facilitated.

The dormitory is managed on a self-governing plan by the workers, though the factory authorities reserve to themselves the right to supervise its management. Regulations governing the dormitory were, of course, drawn up by the factory.

The dormitory rooms are inspected by the authorities once in the morning for cleanliness and once in the evening in order to see whether all have turned in and are well-behaving. For the management of the dormitory, there are elected among the workers in each room two men whose duties are to supervise the conduct of their room mates, enforce the rules regarding discipline and cleanliness and report things of consequence to the managerial department. Each one in the room is, in turn, responsible for one day to clean it.

362 356 466 Cleanliness is classified by the factory authorities into five grades and after the daily inspection, each room is marked with a certain grade. At the end of every month, reward both in money and in kind are given to members of those rooms which have received high grading, while fines are imposed on those

who fail to observe the rules of order and cleanliness. The re- 362
wards vary from one to five dollars, while the fines, only from 5 356
to 30 cents. The fines are not collected by the factory but are 466
reserved for buying, at a later date, things that are needed in the rooms on which fines have been imposed. This system of rewards and fines is said to have worked quite satisfactorily. And our investigation well supports this view, for during the stay of the investigator in the factory, always he found the rooms well kept.

Workers having families are not provided with free 362
lodging by the factory. As workmen who brought families to 466
Tangku have greatly increased in recent years, the factory bought in 1926 35 rooms which have been let out to them on very reasonable terms. Again, in the summer of 1927, a group of new houses of about 33 rooms was built by the factory for the accommodation of workers' families. Some more new houses, it is said, will be put up with a view to forming in the future a Chiu Ta Community in Tangku. The factory charges only 50 to 80 cents per room as monthly rent which is barely enough for its annual repairing. Such expenses as building a doorway or walls are borne by the factory.

Water Supply.—There has never been any fresh water-supply 365
at Tangku. Fresh water is brought over from a long distance 466
and at a high price. It was the Chiu Ta Factory that first opened two artesian wells and furnished cold and boiled water to its resident workers. In 1927, when the price of fresh water soared up, the use of the well water was also granted to the workers who had families with them. The quantity of water each family may consume is limited according to its size.

Fuel and Light.—The resident workers are provided with 354
electric light and heating, free of charge. Workers having 466
families are denied this benefit, but wood shavings in the factory are distributed to them free. Again, in the east section coal dust is sold to the workers having families at 25 cents per 100 catties, while in the west section it is simply thrown away, so that those who want it may pick the same up.

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CONSULTATION ROOM OF THE HOSPITAL

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FILING INTO THE DINING ROOM

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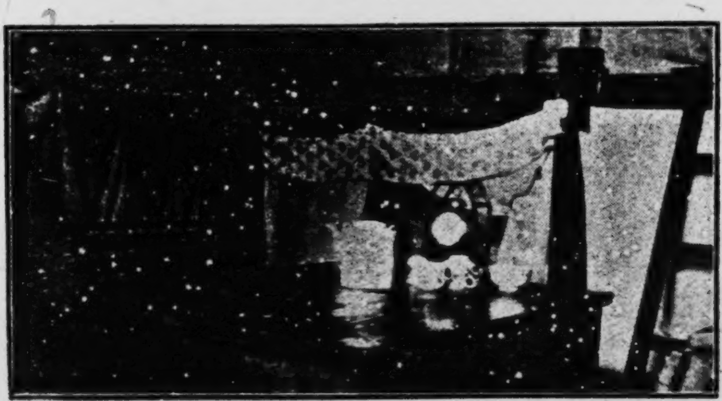

INTERIOR OF THE DORMITORY ROOM

[FACING p. 32]

354 644 The factory authorities have contemplated to install electric lights for the workers' families, but as the houses are widely scattered, the work has not yet been carried out.[1]

644 262 Food and Meal Ticket.—The Chiu Ta workers were formerly provided with meals by the factory free of charge, but they were later commuted as a part of their wages. As a result, most of the workers began to cook their own food. In 1923, when the dormitory was completed, it was provided with a dining hall in which steamed bread and other cooked food were sold to the workers at cost. And the workers were then prohibited to cook food in their own rooms.

As the east section is far away from the main dining hall there is a separate building in which a toilet room, a locker room, a small kitchen and a small dining room are provided for the use of the workers.

The worker's diet consists of the following: wheat bread, corn bread, millet porridge, doughnuts and salted vegetables. The price of bread is always fixed at two cents each, the weight varying according to the market price of flour. Every day, the weight of the bread is shown on a sign board and it may be weighed by any one who likes to do so with a balance in the dining room. Bread of insufficient weight may be changed at once. During the festivals and the three days before the New Year, dumplings with sugar and meat contents are sold at the same price as that of the plain bread, and special foods are also prepared for sale.

To facilitate purchases at the dining room, meal tickets are issued. Workers may secure them in advance at the superviser's office to buy their food. The total value of tickets issued to one worker in a month should not exceed $6, and this amount is to be deducted from his wage at the end of each month. In recent years, these tickets are even used to pay fines, rent, and other miscellaneous expenses. This has greatly facilitated the miscellaneous transactions and reduced the use of money.

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[1] Our latest information is that the workers' houses have now all been installed with electric light.

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[Facing p. 33]

FANCY DRESS STILTS IN FRONT OF THE DORMITORY

465 Commutation of Gifts.—In China, festivals are important 431 occasions, when edibles and other gifts are presented and exchanged. In the few years of its existence, the factory has made it a practice to present at various festival times to each worker 10 dumplings, ½ catty of "mid-Autumn cake," ¼ catty of dried plums, ½ catty of sugar, 10 cents for making "la-pa" porridge, a food to be taken on the eighth day of the last month in the year. Besides, the factory also presented to each worker two suits of clothing and a straw hat at festival times. All these gifts were commuted in March 1927 into an annual sum of nine dollars to be paid to each worker in monthly instalments at 75 cents.

While the seasonal gifts have been commuted into money, there remains, however, still the privilege of the workers having families to receive free salt from the factory. The husband and the wife are permitted to get every month one catty of refined salt each, free of charge, while all the other members of the family including the children get only half a catty each.

To those who do special work are given by the factory garments as well as head and foot wear. For instance, the watchman receives at the beginning of the winter season a felt hat, a fur coat and a pair of felt shoes. The dispatcher and the servant are each given a raincoat and a pair of water proof shoes.

466 Recreation.—Recreational activities of the workers in the factory consist of indoor and outdoor sports, new year entertainments, summer conference and modern plays. The expenses for all these activities are met by fines from unexcused absences, though the greater portion is contributed by the factory.

466 (1) A room next to the Workmen's Library is reserved 524 for indoor games. There are ping-pong, chess, (such as "Wei" chess and "military" chess), and other articles of amusement. Chess games, both Chinese and foreign, are the most popular.

466 (2) Outdoor sports like the swing, the iron bar, the swing 526 bridge, stone weights, etc. are very much liked by the workers. These apparatuses are installed in the courtyard of the work-

466 526 men's dormitory. Ball games, in particular the soccer, are also popular. Contests are often arranged with the workers of the Pacific Alkali Factory, and occasionally with the students of the Tangshan Engineering College.

(3) Typical Chinese new year amusements are very much liked by the workers. They are the dragon-lantern, lion-dance, fancy dress stilts, singing, and the boat-and-cart-shows. Owing to unsettled social and political conditions in these years, workers are not so enthusiatic for these shows as they used to be.

(4) A summer conference was held in 1925 by pupils in the Workmen's School. In the conference were held personal interviews, track and field meets, swinging contests, boxing, story telling, music and moving pictures for the amusements of the workers. This conference was discontinued in later years.

466 545 (5) Modern plays are performed by workers and members of the administrative staff. From 1921 to 1925, there were held theatrical performances of this kind two or three times a year. None, however, have been performed during recent years on account of the disturbed conditions in the country.

II. EDUCATIONAL FACILITIES

466 873 Among the educational facilities provided by the Chiu Ta Factory may be mentioned: (1) the Workmen's School (2) the Ming Shin Primary School and (3) general educational facilities.

The Workmen's School.—The Workmen's School was first established in March 1921, its teachers being recruited from the administrative staff. But it was closed in June 1923, on account of the difficulty in getting enthusiastic teachers. Under a reorganization plan, in which the Chiu Ta Factory pledged 60 per cent and the Pacific Alkali Works 40 per cent of the total expenses for the support of the school, it was reopened in August 1924. There are in the new school two grades, the general and the special, the courses in each grade extending to three years. One paid teacher is employed to teach the Chinese language, while members of the adminstrative staff volunteer their services to teach other subjects or courses.

Books and stationery are all supplied to the workmen free of charge. The curriculum of this school is listed below:

Class		Subjects	Hours per week
General grade	1st year	National Language	2 hours
		Penmanship	1 hour
	2nd year	National Language	2 hours
		Penmanship	1 hour
		Abacus Practice	1 hour
	3rd year	National Language	2 hours
		Penmanship	2 hours
		Abacus Practice	1 hour
Special grade	1st year	National Language	2 hours
		English	2 hours
		Arithmetic	2 hours
	2nd year	English	2 hours
		Arithmetic	2 hours
		National Language	1 hour
		Drawing	1 hour
	3rd year	Ditto.	Ditto

In the first year of the general grade, the workers are first taught Chinese characters and then sentence construction. In the second year, lessons on letter-writing in *pai hua* (spoken language) are added. In the third year, lessons on useful knowledge are offered. Lessons in English and arithmetic are similar to what are usually taught in the primary school. Drawing lessons are of an elementary nature which may be of some use to skilled workers. Since February 1925, the factory authorities have promulgated rules making the workers under 25 years of age attend the school compulsory. Those who joined the class in 1924 are all required to finish their courses at the school; while those who quit the school before graduation are required to pay the expenses for books and stationery supplied. Absence without cause is fined 10 cents each time.

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On account of the frequent change of work among the labourers, no accurate report of those attending school has yet been ascertained. It has, however, been estimated that, on the average, 350 attend the school every year. The following table shows the enrollment of students from the five sources in the winter term of 1926 as distributed in the various classes.

Table 7.—The Enrollment at the Workmen's School Classified According to Classes in the Winter of 1926

Class	Number of Students enrolled from					Total
	Chiu Ta	Pacific	Golden Sea	Hospital	Servants of private families	
Special 2nd	7	4	1	—	—	12
Special 1st	9	14	1	—	—	24
General 3rd	36	19	1	1	1	58
General 2nd	92	25	3	1	—	121
General 1st	95	25	1	1	2	124
Total	239	87	7	3	3	339

It is shown in Table 7 that the Chiu Ta workers constituted two-thirds of the total number of workers attending school. According to the factory records in April 1927, the proportion between the workers who attended the school and those who did not was found to be as follows :

Table 8.—Number of Workers Attending School Classified According to Sections of the Chiu Ta Factory

Section	Total number of workers	Workers attending school	
		Number	Per cent
West Section	262	111	42.4
East Section	207	117	56.5
Salt Field Administration	5	4	80.0
Dormitory	22	13	59.1
Iron Workshop	45	37	82.2
Power House	15	7	46.7
Total	556	289	52.0

The Ming Shin Primary School.—Primary education at 466
Tangku has always been far from satisfactory. Those who have 872
families with them at Tangku sorely felt the need of a good elementary school where their children might be properly educated. The general manager of the Chiu Ta Company having been informed of the situation was generous enough to donate a sum in February 1925, for the founding of a private school where the children of workers as well as those of administrative staff members are admitted free of tuition. Children whose parents are not connected with the Company are charged $6 a year, payable in two terms. There are two grades offered by the school (1) the elementary grade with 4 years' course and (2) the advanced grade with two years' courses. The curriculum of the school is similar to that in other primary schools except that vocational subjects are taught to advanced grade students. The courses of the two grades are as follows :—

Elementary grade.—National language, arithmetic, nature study, social study, drawing, manual training, music, physical exercises.

Advanced grade.—National language, arithmetic, history, geography, hygiene, civics, nature study, English, useful knowledge of commerce and agriculture, drawing, manual training, music and physical exercises.

The enrollment of the school in 1925 was 19, but it has increased to 92 in 1927. There were at the time of the investigation 61 boys and 31 girls. They were drawn from the following families: administrative staff 33, workers 18, others 41.

General Educational Facilities.—Under this heading may 466
be mentioned the library and public lectures. (1) The Workmen's 873
Library contains daily newspapers and books of about 1,000 volumes which were presented by other institutions and individuals. In July 1927, some more books were purchased. It is a pity that the workers cannot make good use of the books, as some of them are written in rather difficult language. (2) From 1923

466 873 to 1926, public lectures were given once or twice each week with a view to imparting general and practical knowledge to the workers.

III. SANITARY WORK

466 It is impossible to give in full detail the sanitary work in the Chiu Ta Factory; but, for our purpose, we shall confine ourselves to the sanitary measures adopted in the factory and the dormitory and also the good work carried on at the hospital.

Sanitary Work in the Factory.—The buildings of the Chiu Ta Factory were not constructed under a systematic plan; consequently, some of them were not so suitable to the work as they should be. But it appears that the buildings completed at a later date were much improved. On the whole, the working conditions must be considered wholesome. For instance, the work of boiling and baking salt is carried on in separate rooms, so that the smoke or steam of one room will not drift into the other rooms, so as to interfere with the various kinds of work going on there. Besides, a ventilator was installed in order to enable a constant circulation of air in the room. Since 1926, the factory began to pay more and more attention to sanitation and safety, and it seems that the sanitary conditions will be still more improved in the near future.

The various kinds of work in the factory are not of a risky nature. Yet, certain wearing articles are provided by the factory, in order to reduce the hardships of the workers. For instance, the *kang* on which salt is baked is too hot for men with ordinary shoes to walk on. Wooden clogs are, therefore, made for salt bakers to wear during working time. The brine in the salt tank causes irritation particularly in the winter on the skin of the washer and in order to prevent this trouble, gloves are provided for washing the tank. The salt-boiler and tank-washer often put on waste salt bags to protect their bodies from the dampness of the air.

In order to keep the product clean, spitting is strictly prohibited in the salt refining room. One worker is said to have

been immediately discharged, when he was discovered violating 466
the rule.

Sanitary Work in the Dormitory.—The dormitory is built 466
with an open space before it, so that it gets plenty of sunshine 305
and air. In the dormitory, there are provided a barber shop, a
bath room, a toilet room and a laundry room. (1) The furnishings
and equipment of the barber shop are provided by the
factory. Very reasonable rates are charged for shaves and
haircuts. (2) A permit, to be procured from the supervisers, is 466
required for taking bath. In this way, a record is kept by 515
the supervisers of the number of baths taken by the workers. A
notice is served to those who entirely neglect bathing. However,
on account of the frequent transfer of the bath permits among
the workers, negligent cases could not be traced. (3) The toilet
room is furnished with hot and cold water pipes. But for lack
of repair, the room has unfortunately fallen into disuse. (4) The
factory once attempted to employ laundry men for the workers,
but they were not patronized; and in order to save laundry expenses,
the workers prefer to wash their own clothing in the
laundry rooms provided by the factory.

The Hospital.—In its early days, the Chiu Ta Factory had 466
only a small number of workers, for whom medical services were 743
scarcely needed. The few cases which needed treatment were
taken care of by the Peking-Mukden Railway Hospital, which
was paid by the factory. It was soon felt that this arrangement
was not satisfactory, when the number of workers had increased.
So in 1924, a hospital was established under the joint auspices
of the factory and the Pacific Alkali Works. There are in this
hospital five wards which accommodate 24 patients. The medical
service is rendered free of charge to members of the administrative
staff and the workmen of the two factories. The hospital
is in charge of a physician, a graduate from a medical college
in Japan. He has on his staff two assistants and one junior
clerk. The running expenses of the hospital are about $5,000
a year.

In addition to the usual medical service, the hospital is also

466 743 responsible for the following three duties: (1) physical examination of the workers, (2) prevention of epidemics, and (3) sanitary inspection of the factory.

Physical examination is required of both new and old workers. Any workman who is found to have contracted venereal disease is dismissed immediately. The pupils of the Ming Shin Primary School are also examined at regular intervals.

466 743 751 For the prevention of epidemics, the hospital is stocked with various kinds of anti-toxins. Every worker connected with the factory must be vaccinated, the aged ones alone being exempted. Two days are reserved by the hospital every year for giving free vaccination to the inhabitants of Tangku. In case there occurs an epidemic at Tangku, the workers are immediately noticed and taught preventive measures.

Inspection is held from time to time by the physician of the hospital. Preventive measures for sickness are prescribed for the workers.

164 127 The hospital possesses complete records of cases treated, such as registration cards, diagnoses, prescriptions, diaries of the physician and nurses, and so on. These have lately been carefully studied by the physician and have been compiled into statistics. A part of these statistics, limited to the period from October 1924 to September 1925, is now available for our use and we present them in the appendix of this book.

164 466 From the statistics of sickness and our personal observations, it may be concluded that diarrhoea is the most common disease among the inhabitants of Tangku as well as the Chiu Ta workers. The diseases typical of the Chiu Ta workers are of four kinds. (1) Cold.—They are easily contracted by workers after strenuous exertion and perspiration. (2) Skin inflammation.—This is caused by the dampness of the air and cold vapour in the salt refining room. Its prevalence can be gauged from the fact that as many as 437 cases occurred in the whole year. Skin inflammation is, in fact, an occupational disease. (3) Burns.—This is usually due to contact with boiled brine and hot iron implements. The careless handling of the latter is the sole

cause of this kind of accidents. (4) Bruises.—1050 cases have 164 been recorded in one year. Fortunately all the cases were 466 slight in nature. According to our conversation with the workers, the salt boilers and bakers easily suffer from coughing and hypersecretion in the eyes which are often caused by the excessive heat in salt refining.

IV. COMPENSATION AND MUTUAL AID AGENCIES

Compensation.—According to the compensation provision 466 in the regulations of the factory, compensations or rewards are given to workers under the following conditions:—

Art. 1. "Any worker who has rendered satisfactory service to the factory for more than eight years shall receive a special reward."

Art. 2. "Any worker who retires on account of invalidity or old age after having been in the service of the factory for more than ten years shall receive as reward a sum not less than $50 but not more than $150."

Art. 3. "Any worker wounded or disabled while engaged in the work of the factory shall receive as compensation a sum not less than $20 but not more than $60."

Art. 4. "Any worker who dies while engaged in the work of the factory, shall receive a sum not less than $60 or more than $200 for his funeral expenses."

The first two articles have not become operative so far, as only one worker was paid $100 on his retirement on account of blindness. Article 4 has practically remained a dead letter, as no death has ever occurred in connection with factory work. Thus only the third article is being carried out and during the last few years, the amount of compensation has been increased from $60 to $100.

Apart from the compensation for old age, casualty and mortality, the factory has always been generous in giving relief to the families of deceased workers. Thus, if a worker dies at Tangku, a sum of $50 is paid to his family to be disposed of as its people see fit. In case he is extremely poor, a coffin is given

466 free. If the worker dies either on his way home or at home, $20 is given to his family. In the case of the death of a member of the worker's family, a coffin may also be given free if the request is found justified.

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456 Mutual Aid Society.—The Mutual Aid Society was originally started by a group of workers in the Chiu Ta east section. The purpose of this society was formerly limited to raising funds for funeral and marriage expenses of their friends. But it was later expanded to include all workers of the factory. The necessity for organizing such a society was also felt by members of the administrative staff as they were constantly required to make gifts of money on the occasion of the marriage or death of the workers. As a result of this, Mutual Aid Society of the workers began to admit the administrative staff members from May 1927, but the latter were only making conrtibutions without enjoying the benefit of the society. A sum of 30 cents is charged every member as initiation fee; and the monthly contribution of each "administrative" member is 10 cents and that of the "working" member is 5 cents. The sum thus accumulated is to be disbursed to the workers in the following way :—

(1) $10 for marriage expenses of a worker;
(2) $10 for the funeral expenses of the parent or the wife of a worker;
(3) $30 to the orphan of a worker, or to the worker's parents having on offspring to take care of them.
$15 to the parents of a worker who has brothers to take care of them.
(4) For workers who, on account of disability or serious illness, wish to go home but are short of travelling expenses, the allowance is to be determined according to circumstances.

The affairs of the society are executed by a board of fifteen. They are elected by ballot, two from among the administrative staff members, and 13 from among the workers. Their term of office is two years, but may be renewed. The manager and assistant manager are elected from among the members of the board. The duty of the manager is to attend to the accounts of the society and to call meetings and make financial reports. 466 456

An annual meeting is held on April 1st, at which all business of the society is discussed. New workers are admitted after having been three months in the employ of the company. Those who fail to pay monthly membership dues forfeit the privilege of membership. 8

The Consumers' Cooperative Store.—A store selling sundry articles was opened by some private person in the early days of the factory. But as the store was conducted on a business basis, with an eye to profit making, complaints were frequently lodged by the workers against high prices it charged for articles. The store was then closed by the factory, and, in its stead, a cooperative store of the Chiu Ta Salt Refinery and the Pacific Alkali Works was founded in April, 1927. The capital shares were subscribed by the staff members and workmen of these two factories. Each share is two dollars. A staff member is enititled to buy two shares and a workman, one share. In 1927, the capital was about $2,600. Both edibles and sundry articles of daily use are on sale at the store. It is further comtemplated to sell at the store rice and flour at a specially reduced price. There are in this store one manager who serves concurrently as the proctor of the dormitory, three salesmen and two clerks for keeping accounts. There is, besides, a board of five directors, whose function is to determine the general policy of the store, the kinds of goods to be stocked with and the prices. The price of articles is fixed in such a way as to leave a little margin for profits to be distributed in the following way: (1) 10 per cent to be paid as bonus to the store manager (2) 20 per cent to the salesmen and clerks (3) the remaining 70 per cent being distributed *pro rata* to the shareholders. Business at the store varies with the time of the month. According to its salesmen, more business is done during the first half of the month after the worker is paid his wage, but it gradually declines, during the latter half of the month when his wage is gradually spent. That is to say, the purchasing capacity of 466 474

466 the workman dwindles slowly after the payment of his wage
474 until he is paid again in the next month.

V. SYSTEMS OF SAVINGS DEPOSIT AND FAMILY REMITTANCE

For the purpose of encouraging thrift and promoting the
466 welfare of the worker, the factory has installed two systems, (1)
454 the savings deposit and (2) the family remittance. First any workman of the factory may open a savings account with the managerial department which, in turn, transfers the deposit to the accounting department at Tientsin. The deposit must not be less than 50 cents (silver) each time. The monthly rate of interest is 10 per cent for every dollar deposited and the interest is paid to the workman every month with his wages Secondly, the factory renders gratuitous service to the workman in remitting his money to his family. In order to prevent the abuse of this privilege, workers are required first to deposit the money to be remitted. The period for the drawing of the deposit is limited to the first five days of each month. It is to be remembered, however, that the worker's savings do not necessarily constitute his total savings, nor does the remittance necessarily constitute the total amount remitted. Nevertheless, there is no doubt that the factory handles a greater part of these two items. Let us now study the figures of savings deposits from January 1926 to June 1927 and the figures of remittances from January 1925 to June 1927 which are taken from the factory records.

454 First there is noticeable in Table 9 a general tendency
that the total number of depositors formed a definite proportion to the total number of workers in the factory. On the average, three-fourths of the workers deposited their savings with the factory, while the remaining a quarter either did not have any savings at all or did not entrust them to the factory. Yet it should be pointed out that a departure from this tendency occurred at times, due either to abnormal conditions of the country or to a high rate of turn-over among the workers. For instance, the percentage of depositors rose to 83.4 in March 1926 and dropped to 60.9 in December of the same year. The high percentage in

the former case was probably attributable to a suspension of the 454
postal remittance service at that time, so that more workers found safe custody of their unused funds in the hands of the factory. The low percentage in the latter case was due to the fact that 74 workmen were newly admitted in December 1926, and consequently no savings could be expected from them. Besides, the last quarter of each year, in particular the month of December, always found a gradual decline in depositors.

Table 9.—Total Number of Workers and Depositors for Each Month in the Chiu Ta Factory, January 1926 to June 1927

Month	Total number of workers		Total number of depositors		Percentage of depositors on total number of worker	
	1926	1927	1926	1927	1926	1927
January	508	558	403	413	79.2	74.0
February	503	563	414	440	82.3	78.1
March	495	561	413	403	83.4	71.8
April	521	555	400	416	76.8	75.0
May	512	570	380	399	74.2	70.0
June	504	561	368	371	73.0	66.1
July	498	—	370	—	74.3	—
August	478	—	348	—	72.8	—
September	475	—	353	—	74.3	—
October	475	—	348	—	73.3	—
November	478	—	342	—	71.5	—
December	552	—	336	—	60.9	—
Average per month	499.9	561.3	372.9	407.0	74.7	72.5

That one-fourth of the total number of workers should fail to make use of the savings system perhaps deserves some comments. First of all, what an ordinary worker can earn generally leaves little for saving. Those who are able to save may find the system troublesome and prefer hoarding. And a 452
great amount of savings must have no doubt been attracted by the loan societies among the workers. The loan society, it may be mentioned in passing, is always popular with the labouring class, especially in the districts where funds

452 cannot be easily secured. Two types of loan-societies may be
distinguished: the interest paying and the non-interest paying. In
the former, the depositor gets a monthly interest of from 15
per cent to 30 per cent. Those who seek for high interest
naturally invest their savings in such a society rather than
in the factory where only 10 per cent interest per month is
allowed. In a homogenous group of workers, living closely
together and having regular incomes, this sort of society is
454 easily maintained and kept flourishing. Lastly, very few workers
having families to support at Tangku care to use the factory
savings system. This condition is shown in the following table
where more than half of the workers in the power house, salt
field administration and the iron workshop—almost all of whom
have families at Tangku—were not depositors at the factory. It is
interesting to note that all these workers had high earnings. If
they did not use up all their earnings to feed and clothe their
families, or squander them, then they must have found more
profitable means of investment in some other direction.

Table 10.—Total Number of Workers and Depositors in the Chiu Ta Factory in February 1927, Classified According to Sections

Section	Total number of workers	Number of depositors	Percentage of depositors on total number of workers
West Section	286	253	88.5
East Section	188	139	73.9
Power House	15	7	46.6
Salt Field Administration	4	1	25.0
Dormitory	22	18	81.8
Iron Workshop	48	22	45.8
Total	563	440	78.1

So much for the number of depositors. Let us now proceed to examine the amount of deposits from month to month during the period January 1926 to June 1927. The total amount of deposits and the average amount of deposits per person at the end of each month during this period are shown in Table

11. They were in the custody of the factory. The first point 454 to be noted is that these amounts fluctuated from month to month. This is, no doubt, determined by the amounts of deposits and withdrawals taking place from month to month. But what is remarkable is that there appears to be a general tend of fluctuations within the yearly period. As a rule, deposits increase slightly in January and rise suddenly in February. Then they begin to fall abruptly in March and gradually afterwards until they reach the lowest point in December. The sudden rise of deposits in January and February is undoubtedly due to the payment of the extra month's pay and the general bonus in these two months, whereas the drop beginning from March is because of the drawing of deposits for family remittances, mainly used to pay the outlay for farming at home. Remittances are also made in other months, notably in September; but the amount is usually not so significant as in March. Exception to this tendency is, however, shown in 1926, when the sudden drop of the deposits happened as late as in May. This may be accounted for by the fact that there was a suspension of the postal remittance service in March and April, so that the amount of deposits drawn by the workers was not so appreciable. In normal years, however, the wholesale remittance of deposits happens usually in the month of March.

Another thing to be noted is that if we compare the amounts of deposists between 1926 and 1927 month for month, we shall find that the total amount of deposits of each month in 1927 was much less than that in the preceding year. Indeed, the months that are comparable are only six in number. Yet the phenomenon is decidedly noteworthy. Three factors seemed to be responsible for this phenomenon. One was that more new workers were added to the factory on the retirement of the old ones in 1927 and they had nothing to save. Another was that the rising cost of living in 1927 must have reduced the general saving capacity of the workers. On the one hand, they had to spend more for their own sustenance, while, on the other hand, they found it necessary to remit more money home than

454 men had sent remittances home and in larger amounts. The last factor was that there happened to be a reduction of the salt refining work in 1926 beginning from April. Consequently many workers were deprived of the salt bonus and savings were thereby reduced.

Table 11.—Total Amounts of Deposits and Average Amounts of Deposits Per Person for Each Month in the Chiu Ta Factory, January 1926 to June 1927

	Amount of new deposits during the month	Amount of withdrawals during the month	Amount of existing deposits at the end of the month	Average amount of deposits per person per month
1926, January	$ 685.5	$ 443.0	$4.931.0	$12.24
,, February	4.112.5	549.5	8.494.0	20.52
,, March	1.100.0	1.035.5	8.558.5	20.72
,, April	1.784.0	1.786.0	8.452.5	21.21
,, May	446.0	3.365.0	5.563.5	14.64
,, June	460.5	1.427.5	4.586.5	12.46
,, July	663.0	723.0	4.526.5	13.01
,, August	470.5	462.5	4.534.5	13.03
,, September	326.0	616.5	4.244.0	12.02
,, October	543.0	483.5	4.303.5	12.37
,, November	360.0	933.0	3.730.5	10.91
,, December	397.0	618.0	3.509.5	10.44
Average amount per month	945.7	1.037.1	5.451.2	14.46
1927, January	1.792.0	564.5	4.737.5	11.47
,, February	3.123.5	257.0	7.603.5	18.06
,, March	742.0	2.745.0	5.600.5	13.90
,, April	635.5	1.531.5	4.704.5	11.31
,, May	593.0	1.181.5	4.116.5	10.32
,, June	765.0	431.5	4.451.0	12.00
Average amount per month	1.275.2	1.118.5	5.202.3	12.84

The average amount of deposit each depositor puts into the factory savings department per month is also shown in Table 11. It ranged between 10 to 21 dollars. The same features as we have described in the preceding paragraphs, viz. the general tendency of rise and fall of the deposits during the year and the what was usually required. In fact, it was discovered that more lowering of the savings capacity in 1927 as compared with that in 1926, are also noticeable here.

Family remittances in every month from January 1925 to June 1927 are tabulated in Table 12.

Table 12.—Number of Remitters and Amounts of Remittances for Each Month in the Chiu Ta Factory, January 1925 to June 1927

Month	Number of remitters			Amount of remittances		
	1925	1926	1927	1925	1926	1927
January	30	18	16	$ 340	$ 449	$ 459
February	35	4	2	1,090	135	160
March	56	—	40	1,799	—	1,953
April	14	—	17	401	—	733
May	5	36	13	84	1,946	305
June	10	14	5	196	650	134
July	12	8	—	280	232	—
August	11	6	—	195	102	—
September	21	10	—	452	345	—
October	11	6	—	175	182	—
November	5	8	—	119	278	—
December	—	13	—	—	465	—
Average amount per person per month				23.26	38.96	40.26

It is to be noted that March was the month when the amount of remittances goes up the highest, while April and January follows in subseqent order. In studying the records of two and a half years, it appears that, on the average, the amount of remittances becomes greater each year, a fact which leads us to believe that the prices or living expenses in the native districts of the workers have been rising steadily.

CHAPTER IV

CHIU TA RESIDENT WORKERS

I. GENERAL CONDITIONS OF THE 86 RESIDENT WORKERS

124 There were at the time of investigation 420 workers residing at the factory dormitory. Of this number, 86 or one-fifth had been investigated. It appears that not all of the 420 workers were eligible for investigation. Thus, there were 107 in the group of workers earning between $8.25 and $13.25 whose employment at the factory was shorter than twelve months and there were eight apprentices whose earnings were less than $8.25 a month. If we exclude workers under these two categories, the number of investigated workers is then above one-fourth. The table of the total number of resident workers and the number of workers investigated is as follows:—

Table 13.—Total Number of Resident Workers and Number of Workers Investigated, by Wage Groups

Wage group	Total number of workers	Workers investigated	
		Number	Per cent
Under $8.25	8[1]	—	—
$8.25 and under $13.25	394[2]	79	20.1
$13.25 and under $18.25	16	6	37.5
$18.25 and under $23.25	2	1	50.0
Total	420	86	20.5

[1] Apprentices

[2] Of this number, 107 worked at the factory for less than twelve months.

According to Table 14, Chihli preceded Shantung in having the largest representation among the Chiu Ta workers. This is at variance with our statement made in Chapter II, that Shantung workers formed the largest majority in the factory. The reason

is that new workers, most of whom came from Shantung, have 124
been excluded in our sample.

Table 14.—Nativity of the 86 Resident Workers

Province	Number of workers	Per cent
Chihli	46	53
Shantung	31	36
Metropolitan District	7	9
Honan	1	1
Shansi	1	1
Total	86	100

As to the age of these workers[2] it is shown in Table 15 that 162
67.5 per cent is between the 19-29 age interval, 25.3 per cent between the 30-39 age interval and 7.2 per cent between the 40-59 age interval. It appears that young men between 19-39 constitute more than 92 per cent of the total. The average age is 28.15. If we take into consideration all resident workers, both new and old, the average age would be still lower, as the newly recruited workers were all around the age of 20.

Table 15.—Age Distribution of the 86 Resident Workers

Age group	Number of workers	Per cent
Under 20	1[1]	1.2
20-29	57	66.3
30-39	22	25.3
40-49	3	3.6
50-59	3	3.6
Total	86	100.0

[1] The age of this worker was 19.

As has been mentioned in a previous chapter, the work in 463
the factory may be divided into (1) the principal work, that is, salt refining work proper and (2) the subsidiary work. Except the skilled workers, such as electricians, carpenters and iron

[2][A SAMPLE OF WORKERS IN THE CHIU TA SALT REFINERY IN TANGKU -- ANALYST]

463 mongers, whose work is, as a rule, fixed, all the workers are frequently required to change their jobs. The number of labourers engaged in the various kinds of work, as a rule, fluctuates with the amount of the principal work to be done. For instance, when all the six shops of the factory are in operation, more men would be needed to carry on salt refining work and as a consequence, the number of men engaged in the subsidiary work would be reduced. If, on the contrary, there is little principal work, then the superfluous men would go to swell the group of subsidiary workers. It is in this way that the

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Table 16.—Kinds of Work and Working Hours of the 86 Resident Workers

Kinds of work		Working hours	Number of workers
Principal work	Salt boiling	8	11
	Salt baking	8	6
	Salt dissolving	8	5
	Coal carrier	8	2
	Firemen	8	2
	Total		26
Subsidiary work	Iron workshop	8	6
	Carpentry	8	2
	Electric plant	8	2
	Store room	8	1
	Recorder	8	2
	Sundry job worker	8	30
	Watchman at salt field	6	1
	Watchman	12	10
	Cook	12	1
	Tea kettle keeper	12	1
	Dispatcher	indefinite	1
	Dining room attendant	indefinite	3
	Total		60
Grand total			86

labourers of the factory are maintained during slack times without 463 causing unemployment among them. The predominance of subsidiary workers, as is shown in Table 16, is because of the fact that, at the time of our investigation, salt production in the factory was very much curtailed on account of the depressed conditions of the trade, and a greater number of labourers engaged in the principal work had to be transferred to do subsidiary work. Among the 86 resident workers, 71 worked [466] eight hours a day. This shows the fact that the eight-hour day is the prevailing system in the factory.

As regards the length of employment of the 86 resident 464 workers it was found that 26 workers have been in the employ from one to three years, 42 workers from four to six years, 17 workers from seven to nine years, and one ten years. This agrees approximately with the result of our investigation concerning the workers of the whole factory.

It may be interesting to find out what had been the occupations 463 166 of the 86 workers before they came to the factory. They were agricultural workers 51, skilled labourers 9, servants 3, coolies 10, mercantile employees 12, and soldier 1. In the foregoing classification, "agricultural workers" include farmers, tenants and farm hands; "skilled labourers" include the old-type skilled workers, artisans and handicraftsmen; "servants" include office boys. The nature of the other three kinds of occupation is self-explanatory. All these may be consolidated under two classes, viz. (1) Agricultural workers and (2) industrial workers. It is noteworthy that 51 agricultural workers have turned themselves into industrial hands. The reasons for the change of work from the soil to the factory are many, and it seems that natural calamities, like flood and famine, and social disturbances, like banditry and civil war, have contributed to render country sides in various parts of China almost uninhabitable. Large numbers of peasants have, therefore, been compelled to leave their homes and seek a livelihood in towns. Some have migrated to towns with the hope of improving their standard of living, while others have left their homes simply because of unpleasant family relations.

000 because of unpleasant family relations.[1] The occupations of the
families of these resident workers may be roughly grouped as
463 farming 60, labouring 21, and commercial 5. It is interesting
423 to note that of the families in the three classes, 81 possessed some sort of farm or house property in the country. Table 17 shows the value of property including the farm and house in the possession of the families of the resident workers. Their valuation was all offered by the workers under investigation. Although they could not be verified from independent sources, yet it may be presumed that they could not be too far from the truth.

Table 17.—Value of Property of the Families of the 86 Resident Workers

Value of property	Number of workers' families
Under $1.000	40
$1.000 and under $2.000	24
$2.000 and under $3.000	8
$3.000 and under $4.000	5
$4.000 and under $5.000	2
$5.000 and above $5.000	2
Families owning properties	81
Families owning no property	5
Total	86

It is to be noted that five families had no property whatsoever. 64 families had property at less than $2,000; 17 families possessed more than $2,000 and only two families had property worth more than $5,000. Under the present disturbed conditions in the country, the value of property has already depreciated a great deal. It should be remembered that the properties of these workmen are without exception inherited from their ancesters and not acquired by themselves. Moreover, the property of each family will have to be divided among brothers, sisters and other immediate relatives. After such

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[1] [A SAMPLE OF THE WORKERS IN THE CHIU TA SALT REFINERY IN TANGKU -- ANALYST]

division, how pitiably small each portion will be, it can be 463
imagined. 423

The size and composition of the so-called "greater family" 162
of the workers at their native places are shown in Table 18.

Table 18.—Size and Member Relationship of 86 Families

Number of persons in family	Number of families	Per cent
1	1	1.2
2	3	3.5
3	9	10.5
4	14	16.3
5	17	19.8
6	12	14.0
7	12	14.0
8	3	3.5
9	6	7.0
10	4	4.7
12	2	2.3
14	2	2.3
Total	85	100.0

Average number of persons per family.......... 5.96

Member relationship	Number of persons	Per cent
Heads of family (i. e. workers)	86	22.6
Wives	41	8.0
Sons	21	4.1
Daughters	8	1.6
Fathers	48	9.3
Mothers	64	12.5
Brothers	116	22.6
Sisters	24	4.7
Sisters-in-law	38	7.4
Nephews	28	5.4
Nieces	18	3.5
Uncles	7	1.4
Aunts	7	1.4
Grand fathers	3	.6
Grand mothers	3	.6
Stepmother	1	.2
Grand son	1	.2
Total	514	100.0

The family of from four to seven members seems to be the predominating type. The miximum size of the worker's family had 14 members, while the average size of each family is about six.

From the composition of these families in Table 18, it will also be noted that from the grandfather, the grandmother and the uncle down to the grandson, all immediate relatives usually live in one household. It has been the custom in China for sons to live with their parents after marriage, and the size of a family

162 is therefore steadily enlarged. This tradition is still prevailing in country-places, in spite of its evident undesirability.

Table 19 shows the age distribution of all the members of the 86 resident workers' families.

Table 19.—Age Distribution of Members of Resident Workers' Families

Age group	Males	Females	Total	Per cent	
Under 5	17	7	24	4.7	11.3
5-9	19	15	34	6.6	
10-14	19	17	36	7.0	16.1
15-19	30	17	47	9.1	
20-29	99	44	143	27.8	
30-39	54	25	79	15.4	
40-49	29	27	56	10.9	
50-59	30	25	55	10.7	
60-69	9	16	25	4.9	
70-79	4	6	10	1.9	
80-89	3	2	5	1.0	
Total	313	201	514	100.0	

It will be seen that persons between 15-59 constituted 73.9 per cent of the total number. Those whose ages are either below or above these limits constitute only 26.1 per cent.

Table 20.—Age of Marriage of 45 Resident Workers

Age of marriage	Husbands	Wives
14-15	7	6
16-20	19	34
21-25	7	5
26-30	10[1]	—
31-35	1	—
36-40	1[2]	—
Total	45	45
Average age of marriage[3]	20.80	18.11

[1] One of them reported the age of his second marriage.

[2] Age of second marriage.

[3] Excluding the ages of second marriage.

Only 45 of the resident workers were married. As shown 162 in Table 20, 43 workers were married before the age of 30; of these, 26 were married before the age of 20. It is noteworthy that two workers were married at the young age of 14. Women, it seems, were married at a much younger age than men and they were all married before 25. But, on the whole, it appears from the table that most men and women were married between 16 and 20. Early marriage in China, though at present declining in modern cities, has been quite common in conservative country districts.

Age difference between husbands and wives was found to be as follows: same age 2; husbands older than wives 29, wives older than husbands 14. It seems that among the husbands who were older than their wives, the difference was usually one or two years. Late marriage among men is often due to their inability to support the family, but, in such late marriages, men usually get younger wives. Early marriage in the country districts often happens, when the parents want a daughter-in-law to help take charge of household affairs; in this case, a daughter-in-law somewhat older than the son is preferred.

Of the 86 workers, there were 12 illiterates and 74 literates. 212 Of the latter, 47 were able to read newspapers and 27 were not. Only 22.7 or about one-fourth of the total number of literate workers had some sort of schooling. At the time of the investigation, 66 out of the 74 workers were attending the Workmen's School; the rest who were not were all over 25, which is the age limit set by the factory for compulsory education. There is no doubt that the Workmen's School renders a very useful service to the workers as it was found that at least 26 of the workers who could read newspapers have been educated there. And it is said that some of the literate workers had even begun to take interest in fiction and light literature.

II. INCOME AND EXPENDITURE OF THE 86 RESIDENT WORKERS

As has been stated in Chapter II, the income of the workers 434 in the Chiu Ta Factory consists of six items: (1) wages (2)

434 extra month's pay (3) general bonus (4) salt bonus (5) allowance for working over-time and (6) commutation of gifts. It should be noted that the data of our investigation concerning the income and expenditure of the workers were confined to the yearly period, July 1926 to June 1927, and such events, as the increase of wages or deductions of them due to leave of absence which occurred in the meantime, should, of course, be taken into consideration, in order to ascertain the exact amount of their income.

It will be seen from Table 21 that the income of the resident workers under investigation varied from $115 to $265 a year and the range of variation is $150. The table shows also the average income of each worker derived from various sources.

Three items, viz. wages, extra month's pay and general bonus, formed the most important sources of the worker's income, as they constituted, on the average, 85.4 per cent of the total income. It will be seen from the Table that they are particularly important to the workers of high income groups who, either on account of their skill or on account of their long terms of employment in the factory, received 96 per cent of their income from these three sources. Salt bonus, the next important source of income, is paid only to salt-refining workers, those engaged in subsidiary work, like the workers in the last two income groups of the Table, being denied the benefit of it. Its significance is shown particularly in the third and fourth income groups, in which salt refining workers predominated.

511 In studying the expenditure of the resident workers, it should be borne in mind that they were all "single," at the time of the investigation. About half of them had been married and had left their wives at home, but even those who had not been married had also to support families in their native districts. Thus what a resident worker earns is usually spent partly for his own living expenses, excluding house rent, at the factory and partly for the support of his own people at home. For the latter, a portion of his savings is remitted home from time to time

Table 21—Sources and Amounts of Incomes in One Year of the 86 Chiu Ta Resident Workers, by Income Groups.

Income group	Number of workers	Average annual income per worker from—						Total average income per worker
		Wages	General bonus	Extra month's pay	Salt bonus	Gifts commuted	Allowance for working over-time	
$115 and under $140	23	$91.26	$13.87	$ 7.33	$9.70	$8.97	$ 0.18	$131.31
$140 and under $165	35	102.42	17.55	7.99	12.58	8.92	—	149.46
$165 and under $190	21	117.42	20.20	8.97	20.14	8.96	0.16	175.85
$190 and under $215	3	123.00	21.03	9.83	31.70	9.00	—	194.56
$215 and under $240	3	177.00	19.67	13.66	—	9.00	—	219.33
$240 and under $265	1	214.30	17.30	17.50	—	8,97	—	258.15
All incomes	86	107.72	17.41	8.42	13.74	8.95	0.09	156.33
	PER CENT							
$115 and under $140	26.8	69.4	10.6	5.6	7.4	6.8	0.2	100.0
$140 and under $165	40.6	68.5	11.7	5.4	8.4	6.0	—	100.0
$165 and under $190	24.4	66.8	11.7	4.8	11.5	5.1	6.1	100.0
$190 and under $215	3.5	63.2	10.9	5.0	16.3	4.6	—	100.0
$215 and under $240	3.5	80.7	9.0	6.2	—	4.1	—	100.0
$240 and under $265	1.2	83.0	6.7	6.8	—	3.5	—	100.0
All incomes	100.0	68.9	11.1	5.4	8.8	5.7	0.1	100.0

511 The amount of expenditure incurred by the various workers differs greatly and the reason for this difference is to be found first in personal habits and secondly in one's relationship, emotional or otherwise, with his family members. Some workers found entertainining of friends an important function, while others might like to spend their last cent on clothing. A strong attachment to parents or wife who happens to be in the country might make one spend his entire savings on his family or on travelling expenses to his home.

As shown in Table 22, the resident worker's expenses may be conveniently classified under five groups : (1) food (2) clothing (3) travelling expenses (4) social expenses and (5) miscellaneous expenses. Food expenses include outlay for regular meals and refreshments. Clothing expenses include sums paid for one's own dress, shoes and beddings. To those Chiu Ta resident workers who usually go home once or twice a year during festival holidays or who entertain friends and relatives, travelling and social expenses are, therefore, of special significance, and deserve separate classification by themselves. Miscellaneous expenses include all unclassified items. We shall now proceed to discuss the five groups of expenses in the order here presented.

Food was the largest item in the worker's budget, being nearly 63 per cent of the total expenses. The food expense of each group varied from $74.62 to $90.33 a year. One noteworthy feature of the food expenses among the six income groups is the fact that the decrease of the percentage on food expenditure did not follow closely with the rise of income as it should. Although the food percentage was around 62 per cent or 63 per cent for four of the income groups, yet it went up a good deal in the two groups of higher incomes, the fourth and the sixth. This rise of food percentage is due to the fact that the workers of these two groups were especially thrifty; they economised their living expenses, in order to be able to send money home. Thus, circumstances peculiar to these workers have upset the general tendency of the lowering down of food percentage vis-a-vis the rise of income.

Table 22.—Average Amount and Per Cent of Expenditure in One Year for the Principal Groups of Items of Cost of Living of 86 Resident Workers, by Income Groups.

Income group	Number of workers	Average annual expenses per worker for—					Total average annual expenses per worker
		Food	Clothing	Travelling expenses	Social expenses	Miscellaneous expenses	
$115 and under $140	23	$74.62	$20.98	$ 8.00	$ 7.86	$9.29	$120.75
$140 and under $165	35	76.97	17.87	5.65	9.98	11.40	121.87
$165 and under $190	21	82.28	18.28	4.80	12.90	14.10	132.50
$190 and under $215	3	76.28	14.75	—	10.64	7.04	108.71
$215 and under $240	3	90.33	25.93	2.00	14.81	12.10	145.18
$240 and under $265	1	77.80	13.80	1.30	6.40	13.66	112.96
All incomes	86	78.09	18.93	5.70	10.28	11.42	124.41
	PER CENT						
$115 and under $140	26.7	61.8	17.4	6.6	6.6	7.7	100.0
$140 and under $165	40.7	63.2	14.7	4.6	8.2	9.3	100.0
$165 and under $190	24.4	62.1	13.8	3.6	9.7	10.7	100.0
$190 and under $215	3.5	70.2	13.6	—	9.8	6 5	100.0
$215 and under $240	3.5	62:2	17.9	1.4	10.2	8.3	100.0
$240 and under $265	1.2	68.9	12.2	1.2	5.7	12.1	100.0
All incomes	100.0	62.7	15.2	4.6	8.3	9.2	100.0

8: Lin E-5 (1927)1928 AF12 North China AF12
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511 The average annual expense for food was $78.09. After subtracting the average expense of two dollars for refreshments, the average expense for meals was then $76.09 or about $0.20 per day. Ordinarily a worker spends from $0.18 to $0.20 a day for meals, but in the case of night work or after serious exertion, an additional expense of 2 to 6 cents per day is needed.

146 As the diet of the workers is more or less standardized, it may, perhaps, be interesting to calculate the number of calories the worker usually consumes. The following three diets are commonly taken by the workers:[1]

1. Diet of an ordinary worker.

3 pieces of wheat bread (*manto*)	1270.92	Calories
3 pieces of corn bread	2042.82	„
Millet porridge (3 bowls)	120.00	„
Doughtnuts (3 pieces)	150.00	„
	3583.74	Calories

2. Diet of the worker of light or skilled work.

6 pieces of wheat bread	2541.84	Calories
Millet porridge (3 bowls)	120.00	„
Vegetables	200.00	„
Doughnuts	50.00	„
	2911.84	Calories

3. Diet of the worker of robust type.

6 pieces of corn bread	4085.64	Calories
Noodles (5 Chinese ounces)	623.00	„
Vegetables	300.00	„
	5008.60	Calories

It will be seen that the number of calories the resident worker consumes is from 2,900 to 5,000. The average number of calories yielded by the diet of the workers is about 3,500.

511 Clothing was the second important item of expenses. This item for all groups was $18.93 a year or 15.2 per cent of their total annual expenses. It varied from $17.87 to $25.93 a year.

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[1] The number of calories contained in the wheat and millet bread calculated according to the estimate of Dr. Hsien Wu, Professor of Bio-Chemistry in the Peking Union Medical College, is as follows:—

	Wheat bread	Corn bread
Weight per piece (average weight for the whole year)	3.4 ounces (Chinese)	5.3 Ounces (Chinese)
No. of calories per piece	423.64 caloaies	680.94 calories.

Like food, the lowest expense for clothing happened also in the 511 fourth and sixth groups. It is shown in the Table that workers of the first and the fifth groups spent a good deal on clothing. Of the first group which included mostly the workers in their first or second year, it may be said that they had to spend a larger outlay for garments and bedding than the old workers, but of the fifth group, the higher clothing expense was, no doubt, a result of improved economic conditions.

In analysing the clothing expense, it was found that garments represented 50 per cent and shoes and socks together 32 per cent of its total.

As the resident workers usually make visits once or twice a 511 year to their families in their native districts, travelling expenses 484 have, therefore, often become an important expense to them. It appears in Table 30 that the first three income groups all had high travelling expenses. It was found that there were 14 in the first group, 18 in the second and 8 in the third, who visited their homes during the year under investigation. In the fourth group, none of the workers incurred any travelling expense, while one in each of the remaining two income groups had visited home.

The reason for the difference of travelling expenses in the various income groups is to be found in the fact that workers with low incomes, being natives of distant places, usually visited their families once and sometimes even twice a year, while those with higher income, as a rule, came from Tientsin or Peiping and needed but little expense for travelling.

Social expenses included sums spent for entertaining 511 friends, gifts for festivals, weddings and funerals, etc. As social intercourse is considered an important function among the workers, expense for maintaining this function has, therefore, become a heavy charge to them. The average social expenses of the 86 resident workers amounted to $10.28 per person or 8.3 per cent of their total expenses.

Miscellaneous expenses included (1) regular expenses for such purposes as sanitation, amusements, and new year enter-

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Table 23.—Average Amount of Expenditure in One Year for Items in the Miscellaneous Group, by Income Groups.

Income group	Number of workers	Average annual expenses per worker for —								Total average miscellaneous expenses per worker
		Sanitary expenses	Tea, Tobacco etc.	Amusements	New year entertainments	Utensils	Education	Religion	Wedding and funeral	
$115 and under $140	23	$ 1.62	$ 3.15	$ 1.74	$ 2.37	$ 0.41	$ —	$ —	$ —	$ 9.29
$140 and under $165	35	1.63	2.93	1.91	2.50	0.69	0.18	0.09	1.46	11.40
$165 and under $190	21	2.06	4.05	3.35	3.90	0.79	0.07	—	—	14.23
$190 and under $215	3	1.17	1.00	1.00	3.87	—	—	—	—	7.04
$215 and under $240	3	1.85	4.45	0.40	4.67	0.07	—	0.67	—	12.10
$240 and under $265	1	2.56	1.00	2.00	4.00	4.10	—	—	—	13.66
All incomes	86	1.74	3.23	2.13	2.95	0.64	0.09	0.06	0.59	11.42

tainments and (2) occasional expenses for utensils, education, 511
religion, wedding and funeral. They formed 9.2 per cent of the total expenses. Various items of the miscellaneous expenses, as shown in Table 23 varied from $0.06 to $3.23 per person per year. Of all the miscellaneous expenses, those for tea and tobacco headed the list. It appears that more men indulged in drinking tea than in smoking tobacco, but it is noteworthy that tobacco is much more expensive than tea. Twenty seven workers had no expenses for recreation, but it is quite possible that such expenses were included in new year expenses. The new year expenses are those spent for food and amusement during the new year holidays. This expense is so characteristic of Chinese that it deserves to be classified separately.

Educational expenses were meant for buying books and stationery. Text books in use at the Workmen's School were not included, as they have been supplied free. Only four workers had book expenses, while 41 workers paid expenses for utensils. Expenses for religion included contributions for the celebration of the "Society of Abstainers" (Tsai-li-hui). Only two out of 86 workers had such expenses. Weddings and funerals are not common, as only two workers incurred such expenses.

It will be seen that the expense for tea and tobacco is the most important item, being 28.2% of the miscellaneous expenses or 2.6% of the total expenses. New year expenses come next, being one-fourth of the miscellaneous expenses. Expense for amusement comes third, being 18.6% of the miscellaneous expenses.

So far the income and expenditure of the 86 resident workers 434
have been dealt with separately without examining into the 511
question whether their income was sufficient to cover their 426
expenses. It is pertinent for us to look into this question and study the assets and liabilities of the 86 workers during the year under investigation. It seems that, in doing so, we have to look not only into their surpluses and deficits but also their remittances to home and borrowings. These items are now presented in Table 24. First, it is shown that 73 had surplus, with an average

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Table 24.—Average Amounts of Surplus, Deficit, Family Remittance and Borrowing of 86 Resident Workers in One Year, by Income Groups.

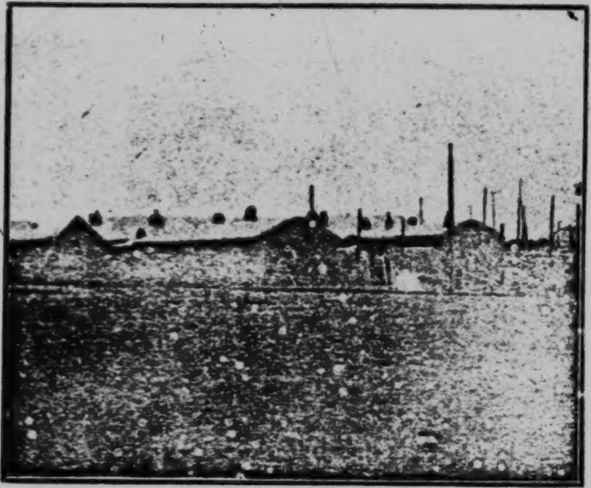
Income group	Number of workers	Average Annual income	Average Annual expenditure	Surplus		Deficit		Average Surplus (+) or Deficit (−) for group	Number of Remitters	Average amount of family remittance of		Number of Borrowers	Average amount of Borrowing of	
				Workers having	Average amount	Workers having	Average amount			remitters	group		borrowers	group
$115 and under $140...	23	$ 131.31	$ 120.75	15	$ 21.22	8	$ 9.45	+ $10.56	16	$ 27.69	$ 19.26	2	$ 22.50	$ 1.96
$140 and under $165...	35	149.46	121.87	30	33.99	5	10.77	+ 27.60	33	42.24	39.83	8	15.25	3.49
$165 and under $190...	21	175.85	132.50	21	43.36	—	—	+ 43.36	20	50.45	48.05	6	16.50	4.71
$190 and under $215...	3	194.56	108.71	3	85.86	—	—	+ 85.86	3	68.33	68.33	1	30.00	10.00
$215 and under $240...	3	219.33	145.18	3	74.15	—	—	+ 74.15	2	70.00	46.67	—	—	—
$240 and under $265...	1	258.15	112.96	1	145.19	—	—	+ 145.19	1	144.00	144.00	—	—	—
All incomes	86	156.33	124.41	73	39.37	13	9.95	+ 31.91	75	44.39	38.71	17	3.44	17.41

of about $40 ($39.37) each and 13 incurred deficits, with an 434
average deficit of $10 each ($9.95). The latter all fell in the 511
first two income groups, the earners of from $110 to $165 a year. 426
Those who had any surplus usually deposited all or a part of it in [454]
the savings department of the factory. It was found that of the 73 workers who had surpluses, 59 followed this practice. The average amount of savings per person was $12.36 a year, but the great majority of the workers had only small amounts to deposit. Thus 41 persons had saved less than $10 each in the year. It should be borne in mind that, in most cases, the deposits thus accumnlated were meant to be remitted home.

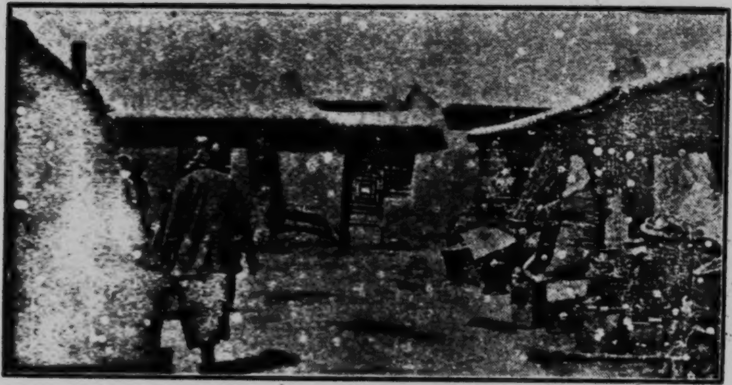
The reasons for the deficit of the thirteen workers are two. 434
First, absence from work for returning home often results in 511
deficits, especially to those with low earnings. For during their leave of absence, the workers suffer a double loss, no income from wages during the leave and the charge of travelling expenses which should be paid out of their pockets. Secondly, wedding and funeral services are a heavy burden to the workers. Extra expenses are needed on these occasions, which must be met by loans, in the case of workers with low incomes. In either case, a deficit would be incurred in the year.

It should be observed that after their own living expenses family remittance becomes the most important charge to the resident workers. Whatever they can save, they send home to support their people; at times they had to borrow if the savings are insufficient. It is shown in Table 24 that 75 out of the 86 workers had all remitted money home. The average amount of remittance of each was $44.39 per year, but it appears that such remittances tended to increase in the higher income groups.

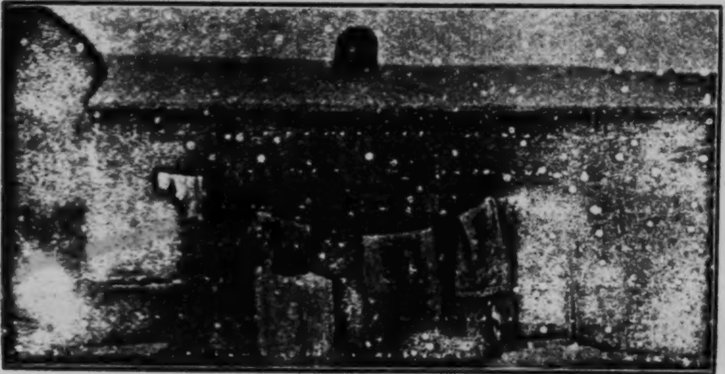
To meet the deficit, occasioned by the increased expenditure 426
for family remittances or travelling expenses, means open to the workers are either borrowing from friends or loan societies or pawning articles. Loans raised from friends are most common, while pawning of articles is very seldom resorted to. The amount of borrowing is usually low. It was found that 17 out of the 86 workers raised loans whose average amount was $17,41 each.



A CLUSTER OF WORKERS' RESIDENCES



WORKER'S HOUSE: THE COURTYARD



WORKER'S HOUSE: EXTERIOR

[FACING p. 68]

CHAPTER V

FAMILIES OF CHIU TA WORKERS

I. GENERAL CONDITIONS OF THE 61 WORKING FAMILIES

124 Of the 136 Chiu Ta workers who had families with them in Tangku, 80 were investigated. From this number, nineteen families had to be excluded at the time of analysis, as it was found that ten of them had stayed in Tangku for less than a year and were thus unable to supply cost-of-living figures for a period of twelve months, while the remaining nine relied for their living upon sources of income other than wages from Chiu Ta. Thus, only data of 61 workers' families will be considered in this chapter.

Table 25.—Total Number of Working Families and Number of Families Investigated, by Wage Groups

Wage group	Total number of families	Families investigated	
		Number	Per cent
Under $8.25	11	—	—
$8.25 and under $13.25	91	38	41.7
$13.25 and under $18.25	23	17	73.9
$18.25 and under $23.25	7	4	57.1
$23.25 and under $28.25	3	1	33.0
$28.25 and under $33.25	1	1	100.0
Total	136	61	44.8

It will be seen from Table 25 that workers earning less than $8.25 a month were not represented in our sample; only 41.7 per cent of those earning from $8.25 to $13.00 a month were investigated, while workers earning $13.25 or above a month were investigated in the proportion of 2:1 or even more. There is no doubt that in our sample, there was a bias for the families receiving high incomes. This could not be helped, as workers on the low

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STARTING FOR A STROLL

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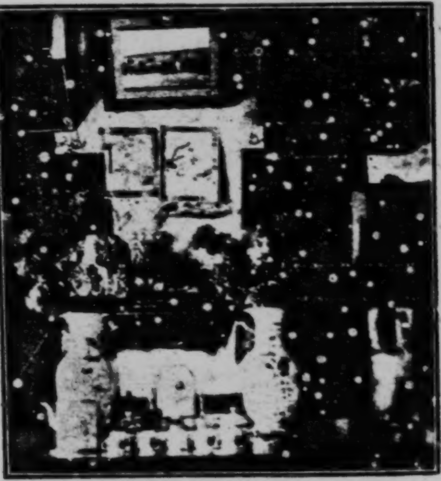

TABLE DECORATIONS
IN A
WORKER'S HOME

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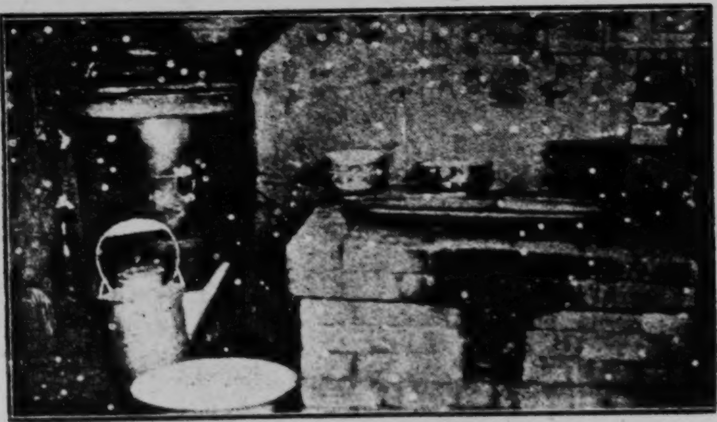

THE KITCHEN STOVE ATTACHED TO THE KANG

[Facing p. 69]

wage levels either had no families at Tangku or had them for a 124 period shorter than a year. On the whole the sample may be considered as representative of that class of families in which Chiu Ta workers were main supporters. Besides, if we exclude the new arrivals in 1927, there were in the winter of the preceding year only 90 workers with families in Tangku, of which the 61 familes consituted already two-thirds. If we exclude again the eleven apprentices from consideration, there would remain only 79 families, of which our sample of 61 would constitute three-quarters.

In the analysis of the data, those who did not eat or live at home, or have any share in the family expenses were excluded from our consideration. Sums of money sent by such persons to their homes were considered as "contributions".

Of the 61 working families, 23 migrated from Shantung, 20 166 from Chihli, 5 from the Metropolitan District, and one from Honan. The remaining 12 were all local families, and of these nine were originally from Shantung or Chihli and established their households there after they had joined the factory.

Thirty two out of the 61 workers, it is found, had been in 464 the employ of the factory from five to eight years, but more than one third of their families were moved to Tangku only for a year or two.

Table 26.—Age Distribution of Workers 162

Age group	Number of workers	Per cent
Under 20	2	3.3
20-29	18	29.5
30-39	24	39.3
40-49	15	24.6
50-59	—	—
60-69	2	3.3
Total	61	100.0

The age distribution of the workers having families is shown in Table 26. It will be noted that 67 per cent is over 29 and

162 28 per cent is over 39. The average age is 34. 37. Compared with resident workers, whom we have already described in the preceding chapter, those having families seemed to be older, as more persons concentrated in the 30-39 age interval rather than in the 20-29 age interval.

The work of the 61 operatives at the factory at the time of the investigation may be tabulated as follows:

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Table 27.—Kinds of Work and Working Hours of 61 Chiu Ta Workers Having Families

Kinds of work		Working hours	Number of workers
Principal work	Salt boiling	8	2
	Salt baking	8	1
	Salt dissolving	8	2
	Firemen	8	2
	Total		7
Subsidiary work	Iron workshop	8	8
	Carpentry	8	2
	Electric plant	8	5
	Store room	8	3
	Recorder	8	2
	Sundry job worker	8	24
	Watchman	12	2
	Cook	12	2
	Tea kettle keeper	12	2
	Dispatcher	indefinite	1
	Servant	indefinite	2
	Total		39
	Grand total		61

463 The previous occupations pursued by these 61 workers were found to be: agricultural work 22, skilled work 8, unskilled work 22, mercantile 9, and soldier and police 3.

162 The families of these 61 workers were small in size, the average size being 3.72 persons. More than two-thirds of the

families had, on the average, four members or less each. As to member relationship, husbands and wives and their offspring constituted 87 per cent of all persons. It may perhaps be argued from this that the working class family in towns tends to be small in size and to limit its membership essentially, if not entirely, to the couple and their children.

Table 28.—Size and Member Relationship of 61 Families

Number of persons in family	Number of families	Per cent
2	15	24.6
3	16	26.2
4	15	24.6
5	5	8.2
6	6	9.9
7	4	6.5
Total	61	100.0

Average number of persons per family 3.72

Member relationship	Number of persons	Per cent
Heads of family (i. e. workers)	61	26.9
Wives	58	25.6
Sons	38	16.7
Daughters	41	18.0
Fathers	2	0.9
Mothers	9	4.0
Brothers	8	3.5
Sisters	3	4.4
Daughters-in-law	2	0.9
Sister-in-law	1	0.4
Grandson	1	1.4
Nephews	2	0.9
Niece	1	0.4
Total	227	100.0

The distribution of the ages of marriage of the 58 couples is shown in Table 29. It will be found that the husbands married later than wives; 50 of the latter versus 20 of the former married before the age of 20. Taken together, 90 persons were married before the age of 25. The late marriage of the worker was in most cases due to his incapacity to support a family.

The age difference between the husbands and the wives was that 48 of the former were older than the latter, and only in seven cases wives were older than husbands by from one to four years.

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Table 29.—Ages of Marriage of 58 Couples

Age of marriage	Husbands	Wives
11-15	2	14[2]
16-20	18	36
21-25	13	7
26-30	15[1]	1
31-35	5[1]	—
36-40	5[1]	—
Total	58	58
Average age of mariage[3] ...	24.1	17.4

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[1] One of them reported the age of his second marriage.

[2] One of them is the "son's betrothed." At the age of 11, she came to live with her would-be-mother-in-law but her marriage did not take place then.

[3] Excluding ages of second marriage

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The members of the 61 families totalled 227, the males and females being about equally divided. Of all the members, over 35 per cent were children under 15, while about 60 per cent were between 15 and 59. Thus the majority was either in blooming

Table 30.—Age and Employment of Members of 61 Families

Age	Males				Females			Total	Per cent
	Chiu Ta factory	Other work	Unemployed	Total	Gainfully employed	Unemployed	Total		
Under 5	—	—	22	22	—	21	21	43	28.6
5-9	—	—	13	13	3	6	9	22	
10-14	—	—	3	3	4	8	12	15	16.7
15-19	5	—	3	8	7	8	15	23	
20-29	19	2	—	21	14	13	27	48	21.1
30-39	24	—	—	24	12	5	17	41	18.1
40-49	15	—	2	17	—	4	4	21	9.3
50-59	—	—	1	1	1	4	5	6	2.6
60-69	2	—	—	2	—	5	5	7	3.1
70-79	—	—	1	1	—	—	—	1	0.4
All ages	65	2	45	112	41	74	115	227	100.0

youth or in vigorous and strong manhood. There were among 162
the male members 67 gainfully employed versus 45 unemployed. 464
If we exclude the boys under 15 who were not yet fit to work, the unemployed would be approximately 10 per cent. Among the female members, there were only 41 employed versus 74 unemployed; in fact, if the girls under 15 were not considered, the number of females employed and that of females unemployed was about equal.

It will have been noted that 65 of the employed males in the 61 families were all working at the Chiu Ta Works. Of this number, 61 may be considered as principal wage earners of the respective families, while four others were only earning wages to supplement the family income. The earnings of the female members were generally insignificant. They were mainly engaged in sewing salt bags or making garments which were used as gifts to the workers, but it seems that the work had been very much reduced during the last year, since the curtailment of the production of salt and also the commutation of the gifts of clothing.

Table 31.—Value of Property of 61 Families 423

Value of property	Number of families
Under $1.000	27
$1.000 and under $2.000	14
$2.000 and under $3.000	2
$3.000 and under $4.000	1
$4.000 and under $5.000	2
$5.000 and above	1
Families owning properties	47
Families owning no property	14
Total	61

According to the reports of the workers, 47 of the 61 working families possessed property of some kind, but only two of

423 them had their own houses in Tangku. The property of others was owned jointly by the workers and their family members in their native places.

212 Table 32 shows the distribution of literates and illiterates among the members of the 61 families. Excluding children under seven, over two-thirds were illiterates, but even among the literates only 27 could manage to read daily newspapers. It was found that the latter had all received some formal education. The low educational standard of the workers having families may be attributed to two causes: first, they were older and have less aptitude for learning, and secondly, they had family affairs to take care of and less time for study. It was further found that of the 18 young girls of schooling age, only two were in the primary school. Those who did not attend any school were kept at home to help in domestic work.

Table 32.—Literacy and Illiteracy of the Members of 61 Families

Member relationship	Total number of persons	Number of illiterates	Number of Literates	
			Not being able to read newspaper	Being able to read newspaper
Workmen	61	27	13	21
Wives	58	58	—	—
Sons	38	28	7	3
Daughters	41	39	2	—
Fathers	2	1	—	1
Mothers	9	9	—	—
Brothers	8	5	2	1
Sisters	3	3	—	—
Daughters-in-law	2	2	—	—
Sister-in-law	1	1	—	—
Grandson	1	1	—	—
Nephews	2	1	—	1
Niece	1	1	—	—
Total	227	176[1]	24	27

[1] Including 54 children under 7

II. INCOME AND EXPENDITURE OF THE 61 WORKING FAMILIES

The family income of the 61 workers was made of five 434 kinds:—(1) income of principal earners which includes the wages of all sorts of the head of a family. (2) supplementary incomes from other members of the family. (3) contributions from brothers, sons, nephews, etc. The net income of those whose relation with the family was close and whose occupation was such as to prevent them from living at home was included under this item. (4) interest, rent and profit; where a family occupies a house of its own possession, the rent estimated according to the rentable value of the house is considered as a part of its income, and (5) remittance from people at native place. This is different from contributions from brothers, sons, etc. in the fact that the latter is a regular contribution, while this is irregular and is only remitted on urgent need.

Table 33 shows the distribution of the income of the 61 working families. The total income of each group ranges between $163.72 and $430.00 The income of principal earners figures very prominently in the total income, varying from 61.7 per cent to 100 per cent. On the average, this source of income alone constitutes 89.1 per cent of the total income. Income from other members of the family constitutes about 5.8 per cent and contributions from brothers, sons, etc. about 2.6 per cent. On the whole, it may be said that the position of the family is determined by the income of the principal earner. The family in the fifth income group is, perhaps, the only exception to this rule, as therein the earnings of other members constitute as much as 38 per cent of the total family income. Income from sources other than wages was all below 3 per cent.

Now, we shall examine the elements that constitute the income of the principal earner. Like the income of resident workers, this consists of six items, viz: (1) wages (2) general bonus (3) extra month's pay (4) salt bonus (5) commutation of gifts and (6) allowance for working overtime: As a few of the workers were offered gratuities for doing special work at the

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Table 33.—Sources and Amounts of Family Incomes of 61 Working Families in One Year, by Income Groups.

Income group	Number of families	Average annual income from—					Total average annual income per family
		Principal earners	Other members	Contribution of brothers, sons, etc. not living in family	Interest, rent and profit	Remittance from native places	
$130 and under $180	22	$ 154.82	$ 6.31	$ 2.13	$ —	$ 0.45	$163.72
$180 and under $230	21	188.12	8.47	4.95	—	1.59	203.21
$230 and under $280	10	219.77	9.96	11.44	9.00	3.00	253.17
$280 and under $330	4	219.38	33.12	17.60	29.75	—	299.85
$330 and under $380	2	308.72	29.50	—	22.50	—	360.72
$380 and under $430	1	249.05	154.35	—	—	—	403.40
$430 and under $480	1	430.00	—	—	—	—	430.00
All incomes	61	192.27	12.50	5.50	4.17	1.22	215.66
	PER CENT						
$130 and under $180	36.1	94.6	4.8	0.3	—	0.3	100.0
$180 and under $230	34.4	92.6	4.2	2.4	—	0.8	100.0
$230 and under $280	16.4	86.8	3.9	4.5	3.6	1.2	100.0
$280 and under $330	6.6	73.2	12.3	4.6	9.9	—	100.0
$330 and under $380	3.3	85.6	8.2	—	6.2	—	100.0
$380 and under $430	1.6	61.7	38.3	—	—	—	100.0
$430 and under $480	1.6	100.0	—	—	—	—	100.0
All incomes	100.0	89.1	5.8	2.6	1.9	0.6	100.0

Table 34.—Sources and Amounts of Incomes of 61 Principal Earners in One Year by Income Groups

Income group	Number of families	total Average income of principal earners	Average annual income from—— Wages	General bonus	Extra month's pay	Salt bonus	Gifts commuted	Allowance working overtime	Gratuities
$130 and under $180	22	$ 154.82	$ 109.70	$ 20.34	$ 8.71	$ 7.34	$ 9.00	$ 0.23	$ —
$180 and under $230	21	188.12	136.21	22.64	10.96	7.34	9.00	—	1.97
$230 and under $280	10	219.77	161.38	22.54	12.93	2.70	9.00	0.82	10.40
$280 and under $330	4	219.38	173.00	21.88	14.00	—	9.00	1.50	—
$330 and under $380	2	308.72	253.25	23.10	20.37	—	9.00	—	3.00
$380 and under $430	1	249.05	201.75	21.80	16.50	—	9.00	—	—
$430 and under $480	1	340.00	358.00	28.00	29.00	—	9.00	6.00	—
All incomes	61	192.27	141.56	21.83	11.36	5.62	9.00	0.42	2.42
	Per cent on family incomes								
$130 and under $180	36.1	94.6	66.7	12.4	5.3	4.5	5.5	0.2	—
$180 and under $230	34.4	92.6	67.0	11.0	5.5	3.6	4.5	—	1.0
$230 and under $280	16.4	85.8	63.7	8.9	5.1	1.1	3.6	0.3	4.1
$280 and under $330	6.6	73.2	57.7	7.3	4.7	—	3.0	0.5	—
$330 and under $380	3.3	85.6	70.2	6.4	5.7	—	2.5	—	0.8
$380 and under $430	1.6	61.7	50.0	5.4	4.1	—	2.2	—	—
$430 and under $480	1.6	100.00	83.3	6.5	6.7	—	2.1	1.4	—
All incomes	100.00	89.1	65.6	10.1	5.3	2.6	4.2	0.2	1.1

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434 factory, they had to be assigned to a special group. The wage income of the different groups varied from $109.20 to $358.00 a year with an average of $141.56. The amount of general bonus of the 61 workers varied from $20.34 to $28.00 a year, with an average of $21.83 for all groups. This amount is a little higher than that of the resident workers, but the income from salt bonus is much less than that obtained by them. The reason is that there were few salt refiners among the principal earners of the families; in particular, all the workers in the high income groups being engaged in skilled work were not entitled to salt bonus. The commutation of gifts to the amount of $9 a year was the same for all workers. The amounts derived from the pay for working overtime and from gratuities were insignificant. It will be seen that among all sources of income, wages and extra month's pay are the most important as they constituted on the average about 70.9 per cent of the family income; the general bonus formed 10.1 per cent; and the rest combined formed but 8.1 per cent.

511 In analysing the family expenses, we have calculated the number of persons of the 61 families, according to Atwater's scale[1] into equivalent adult males. There are 5 kinds of expenses, viz., food, rent, clothing, fuel and light, and miscellaneous. As is shown in Table 35, the total annual expenditure of various income groups ranged between $160.96 and $5 13.54, the average amount for all the groups being $220.37. This sum is distributed as follows : food, $122.73, or 55.7 per cent ; rent, $15.65 or 7.1 per cent ; clothing, $20.95 or 9.5 per cent ; fuel and light, $17.77 or 8.1 per cent and miscellaneous, $43.27 or 19.6 per cent.

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[1] The scale is as follows:

	Male	Female
Under 2 years	30	30
2 and under 6	40	40
6 and under 10	50	50
10 and under 12	60	60
12 and under 13	70	70
13 and under 15	80	70
15 and under 17	90	80
17 and over...	100	80

Table 35.—Average Amount and Per Cent of Expenditure in One Year for the Principal Groups of Items of Cost of Living of 61 Working Families, by Income Groups.

Income group	Number of families	Average persons in family		Average annual expenses per family for—					Total Average annual expenses per family
		Total	Equivalent adult male	Food	Rent	Clothing	Fuel & light	Miscellaneous	
$130 and under $180	22	3.3	2.41	$101.77	$11.72	$16.14	$13.44	$17.85	$160.96
$180 and under $230	21	3.3	2.45	110.52	12.95	17.72	14.95	35.35	191.49
$230 and under $280	10	4.0	2.95	144.26	18.74	24.50	20.92	77.59	286.01
$280 and under $330	4	5.2	3.82	169.25	29.00	29.51	31.26	85.27	344.29
$330 and under $380	2	6.5	4.20	195.79	33.75	45.35	26.67	56.77	358.33
$380 and under $430	1	6.0	5.10	214.03	30.00	47.50	39.32	182.69	513.54
$430 and under $480	1	6.0	4.40	201.14	24.00	49.40	46.34	91.78	412.66
All incomes	61	3.72	2.74	122.73	15.65	20.95	17.77	43.27	220.37
	PER CENT								
$130 and under $180	36.1	....	....	63.2	7.3	10.0	8.4	11.1	100.0
$180 and under $230	34.4	....	....	57.7	6.8	9.3	7.8	18.4	100.0
$230 and under $280	16.4	....	....	50.4	6.6	8.6	7.2	27.2	100.0
$280 and under $330	6.6	....	....	49.2	8.4	8.6	9.0	24.3	100.0
$330 and under $380	3.3	....	....	54.6	9.4	12.7	7.5	18.3	100.0
$380 and under $430	1.6	....	....	41.7	5.8	9.2	7.7	35.6	100.0
$430 and under $480	1.6	....	....	48.7	5.8	12.0	11.[illegible]	22.3	100.0
All incomes	100.0	....	....	55.7	7.1	9.5	8.1	19.6	100.0

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Food expenses include cereals, vegetables, condiments, meats and refreshments. These expenses were obtained first by ascertaining the quantity of each kind of food consumed every month and then multiplying it by its average monthly price. There are six kinds of cereals in common use: white wheat flour, black wheat flour, corn flour, rice, millet, and green beans. For the poor families, black wheat flour and corn flour are the principal cereals, while only workers earning more than $20 a month can afford to eat rice. Appetizers of the poor families consist simply of salted vegetables and shrimp sauce. Meat is seldom taken by the worker's families, except during festivals and new year holidays.

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Rent is the amount paid for occupying the house. Where an occupant is the owner of the house, rent is estimated by valuation. Rent is very low in comparison with all other expenses. Three explanations may be offered for this phenomenon. First, some of these houses were bought by the factory and rented to the workers at an especially low rental. Secondly, in spite of the steady rise of prices in recent years, an old occupant of a house usually enjoyed the privilege of paying rent at the original rate and was not effected by its rise. Besides, some workers lived in the west of Tangku, where rent was usually half of what one should pay for a room in the sections near to the town. Thirdly, the size of these families is small, the average size being only 3.72 persons per family. Thus, a one-room-house would be sufficient to accommodate them all. Even those who had bigger families would prefer to stay in a small house and enjoy less comfort in order to reduce their expenses.

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The worker's houses are generally built of mud with frail framework. Sometimes rooms are built around a ccurtyard accommodating from five to twenty families. Glass windows and brick floor are but rarely found in such rooms. Except those who lived in their own houses, each of these working familes only occupied one or two rooms. It is shown in Table 36 that the average number of rooms of the 61 families was 1.72 per family, the average number of persons per room was 2.67 persons or 2.05

Table 36.—Average Number of Persons Per Room and Average Amounts of Rent in One Year by Income Groups.

Income group	Number of families	Average number of persons living in home per family		Average number of rooms per family	Average number of persons per room		Average rent in one year		
		persons	equivalent adult males		persons	equivalent adult males	Per families	Per persons	Per equi. adult males
$130 and under $180	22	3.27	2.37	1.18	2.77	2.00	$ 11.72	$ 3.58	$ 4.93
$180 and under $230	21	3.09	2.31	1.17	2.65	1.98	12.95	4.18	5.60
$230 and under $280	10	3.80	2.77	1.60	2.37	1.73	18.74	4.93	6.76
$280 and under $330	4	5.00	3.58	1.87[1]	2.66	1.90	29.00	5.80	8.11
$330 and under $380	2	6.50	4.20	2.25[1]	2.88	1.86	33.75	5.19	8.03
$380 and under $430	1	6.00	5.10	2.00	3.00	2.55	30.00	5.00	5.88
$430 and under $480	1	6.00	4.40	2.00	3.00	2.20	24.00	4.00	5.45
All incomes	61	4.80	3.51	1.72	2.67	2.03	22.88	4.67	6.39

[1] One family of this group occupied 3 rooms.

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362 511 427 equivalent adult males, and the average amount of rent was $22.88 a year per family or $4.67 a year per capita. Very few families could afford to live in two-roomed houses. The common way is to rent a one-and-half room house which consists of a kitchenet and a bed room. Sometimes two families may share a three-roomed house with 1½ rooms for each. Thus it is possible to do cooking in one room and sleep in the other. But it is also found that certain families live in one room where a kitchen stove is connected with the *kang*. This is not only uncomfortable but also far from being hygienic, since food is prepared in the bed-room.

511 291 The clothes the worker and his people wear are generally made of cloth. Imported satin is hardly used except in very few families with high income. Some poor families were found to buy flour bags from the factory and make them into garments.

511 372 Expenses for fuel and light include those for coal, reeds (a plant used for fuel in North China) oil, and water. Some families picked their own reeds and coal for fuel. The value of fuel for such families was estimated and included both in family income and in the fuel expenses.

511 Miscellaneous expenses are exceptionally high, as they include both ordinary expenses for sanitation, social intercourse, tea and tobacco, furniture, toilet articles, new year entertainments, religion and amusements, and occasional expenses for transportation, education, medicine, marriage and funeral service. Extra charge for marriage and funeral accounted, in most cases, for the swelling of the expenditure figures in the miscellaneous group. For instance, the marriage and funeral expenses of the family in the sixth income group alone amounted to $120 which is much higher than the miscellaneous expenses of any other group.

In Table 38, the income, total expenses and food expenses per family together with the total and food expenses per adult male are classified according to equivalent adult male groups. It may be noted from the Table that income, total expenses and food expenses per family increase with the number of equivalent adult males in family of each group, but food expenses per equi-

Table 37.—Average Amount of Expenditure in One Year for Items in the Miscellaneous Group, by Income Groups

Income group	Number of families	Average annual expenses per family for——												Total
		Sanitary expenses	Social ex-penses	Tea & tobacco etc.	Furniture & utensils	Toilet articles	New year ex-penses	Religion	Trans-port	Amuse-ment	Educational ex-penses	Medical ex-penses	Marriage & funeral expenses	
$130 and under $180	22	$ 1.21	$ 5.50	1.85	$ 1.55	$ 0.39	$ 3.38	$ 0.43	$ 0.56	$ 0.08	$ 0.12	$ 2.19	$ 0.59	$ 17.85
$180 and under $230	21	1.20	9.64	3.38	0.69	0.31	5.00	0.66	2.37	0.62	0.07	2.82	8.09	35.35
$230 and under $280	10	2.62	11.58	6.32	0.45	0.95	6.19	1.40	7.64	0.78	—	1.66	38.00	77.59
$280 and under $330	4	3.78	7.43	7.82	0.25	1.82	8.62	2.08	1.40	1.07	—	26.00	25.00	85.27
$330 and under $380	2	3.92	9.40	7.60	16.75	0.75	8.00	2.60	—	0.25	3.50	—	4.00	56.77
$380 and under $430	1	7.87	20.24	8.96	1.30	1.20	7.00	5.62	1.50	—	9.00	—	120.00	182.69
$430 and under $480	1	3.63	12.60	3.84	26.10	2.00	5.00	3.11	9.00	—	—	1.50	25.00	91.78
All incomes...............	61	1.85	8.53	3.82	1.88	0.60	4.98	0.98	2.71	0.45	0.33	3.76	13.38	43.27

511 valent adult male shows a steady decrease. We may perhaps generalize from this fact that as the size of a family becomes larger, its income and expenses tend to increase, but food expenses per equivalent adult male tend to decrease.

Table 38.—Average Annual Income and Expenditure Per Family and Per Equivalent Adult Male by Equivalent Adult Males in Family of 61 Working Families

Equivalent adult males in family	Number of families	Average annual income		Average annual expenditure		Average annual food expenses	
		Per family	Per equi. adult male	Per family	Per equi. adult male	Per family	Per equi. adult male
1.8–2.7	40	$194.37	$89.88	$185.68	$85.87	$105.41	$48.75
2.8–3.7	11	219.93	68.73	224.52	70.16	130.43	40.26
3.8–4.7	8	283.07	63.61	322.55	72.48	179.03	40.23
4.8–5.7	2	348.65	69.04	482.73	95.59	201.39	39.87
All groups ...	61	215.67	78.59	220.38	80.30	122.73	44.72

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511 It further appears from Table 38 that the average amount of the yearly expenses per equivalent adult male is $80.30. This amount may be assumed as the minimum cost of living per equivalent adult male per year by which the economic standing of the members in the 61 working families may be judged. Thus those who earned more than this amount in a year may be considered as family supporters, those who earned less, partial dependents and those who earned nothing whatsoever complete dependents. Under such a system of classification, it was found that there were in the 61 working families 63 supporters, 35 partial dependents and 129 complete dependents. The distribution of supporters and dependents in 61 family is shown in Table 39.

There were 59 families where one principal earner supported from one to six partial or complete dependents, while the remaining two had each two family supporters.

It may be stated that the economic condition of a family depends on its income but to a great extent, also upon its size. Where two families receive an equal amount of income, the one of smaller size is surely much better off than the one having

many members. But it seems there is a general tendency that 434
where income increases, the size of the family usually increases 511
also and that its living conditions are somewhat lowered in spite of the increase of income.

Table 39.—Number of Family Supporters and Dependents in 61 Families.

	Total		Average per family	
	Number of persons	Number of equivalent adult males	Number of persons	Number of equivalent adults
Family supporters	63	63.00	1.03	1.03
Partial dependents	35	28.20	0.57	0.46
Complete dependents	129	75.94	2.12	1.25
Total	227	167.14	3.72	2.74

Having considered the income and expenditure of the 61 families, we shall now study the question of their surplus and deficit. In general, it may be stated that many of these families were able to make both ends meet in ordinary times, but they would incur deficit under special circumstances when marriage or death occurs in the family. It is shown in Table 40 that during the year under investigation, 41 families had each an average surplus amount of $18.83 and 20 families had each an average deficit amounting to $51.51.

It will have been seen in Table 40 that many families in the 434
third, fourth and sixth groups incurred big deficits on account of 571
the heavy expenses paid for marriage or funeral. In order to 426
meet these deficits, the families had to resort to the following methods: (1) to make purchases on credit (2) borrowing, (3) pawning articles, (4) borrowing money from the loan society, (5) to use savings and (6) to sell property.

Among these, to make purchases on credit is the most 452
common. Such debts are generally paid as soon as wages are received at the end of the month. In case there is no surplus left to pay back the sum, payment is deferred until the end of the year when the worker receives general bonus and the extra month's pay.

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Table 40.—Average Amount of Surplus, Deficit, Borrowing and Pawning of 61 Families, by Income Groups

Income group	Number of families	Average annual income	Average annual expenditure	Surplus		Deficit		Average surplus (+) or deficit (—) for group	Number of borrowers	Average amount of borrowing of—		Number of pawners	Value of articles pawned of—	
				Number of families	Average amount	Number of families	Average amount			Borrowers	Group		Pawners	Group
$130 and under $180	22	$163.72	$160.96	16	$12.42	6	$22.91	+$ 2.79	12	$21.08	$11.50	2	$3.00	$0.27
$180 and under $230	21	203.21	191.49	15	23.73	6	18.35	+ 11.71	8	23.12	8.81	—	—	—
$230 and under $280	10	253.17	286.01	6	25.24	4	119.96	+ 32.81	5	34.00	17.00	—	—	—
$280 and under $330	4	299.86	344.29	2	21.89	2	96.36	+ 37.24	2	113.50	56.75	1	40.00	10.00
$330 and under $380	2	360.72	358.33	1	4.91	1	0.13	+ 2.40	1	70.00	35.00	—	—	—
$380 and under $430	1	403.40	513.54	—	—	1	110.14	+110.14	1	30.00	30.00	—	—	—
$430 and under $480	1	430.00	412.66	1	17.37	—	—	+ 17.34	—	—	—	—	—	—
All incomes	61	215.66	220.37	41	18.83	20	51.51	+ 4.23	29	32.24	15.32	3	15.33	0.75

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month's pay. Borrowing was resorted to by 29 families of which, 24 paid and 5 did not pay interest for the loans. The rate of interest was from 15 per cent to 20 per cent. 426

Pawning of articles is not commonly practiced by these workers as only three families were reported to have sent their clothes to pawnshops. Borrowing from loan societies was made by five families. The amount of savings was generally small and could scarcely help the family tide over hard times. The sale of property was not commonly practised, because first, there was not much property in the possession of these families, and second, the property, if ever there was, as a rule, was owned jointly by brothers or other family members, which could not be disposed of without the consent of all. 454 425

Twenty-nine families are found to deposit their surplus with the savings department of the factory. The average amount of deposit for the year was $17.06 per family. It is further found that the saving of 21 families were below $20, and none exceeded $90. 454

CHAPTER VI

THE WORKERS OF THE PACIFIC ALKALI WORKS

I. GENERAL FEATURES

385 Chiu Ta and the Pacific Works are sister factories; not only are they situated close to each other in Tangku but they are also related in their business and administrative policies. Many of the undertakings the two factories support jointly for the benefit of the workers belonging to both. It should, however, be observed that the Pacific Works has been in operation only for one year, and therefore its welfare work can not be compared with the Chiu Ta Factory which has been going for twelve years.

The early history of the Pacific Alkali Works may be traced as far back as a decade ago, for during 1916-17 the Chiu Ta Chemical Laboratory had already begun the study of the manufacturing of soda from brine. After several years of preparation, the factory buildings were constructed and completed in 1920. The capital of the Company was originally fixed at $400,000 (silver) but it was later increased to $3,000,000. The factory was opened in 1921 but it was subsequently closed after a few months for renovations in its equipments. It began to work in full swing only since July 1926.

The Company is presided over by a general manager. Under him are three departments; business, manufacturing and administration, each being under a chief of its own. Like Chiu Ta, the business department of the Company is located in Tientsin. The manufacturing and administrative departments are located with the factory at Tangku. The head of the manufacturing department serves concurrently as the manager of the factory.

The Solvay process is used in this factory for manufacturing soda, and the work is done by machinery. The daily output is, on the average, 40 tons, but there is every possibility of this quantity being doubled.

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The Pacific Alkali Works may be said to be very favourably 385 situated for the manufacture of soda. Salt, coal and limestone may be supplied in abundance from the environing districts. Ammonia sulphate is the only material that should be imported from England or the United States.

The Pacific workers fall into nine groups according to the 463 factory regulations: (1) mechanics (2) electricians (3) black- 385 smiths (4) firemen (5) carpenters (6) masons (7) common workers (8) apprentices and (9) servants. However, they may be classified according to the nature of work into the following: — (1) mechanics (2) firemen (3) common workers and (4) apprentices. To these may be added also foremen and assistants.

The duty of the foreman is to direct workers. The assistant being in charge of chemical analysis, he should, therefore, possess some knowledge of elementary English, mathematics and chemistry. Formerly the assistants were usually graduates of primary or even middle schools, but recently the factory has begun to train its own assistants and any person having some knowledge of English and arithmetic is admitted. He who has had sufficient training and practice will be promoted to the class of assistants. The skilled workers include mechanics, blacksmiths, electricians, carpenters, and masons. Firemen form a special class of their own. Apprentices are trained in all kinds of skilled work. The term of apprenticeship is three years, after which every apprentice is required to work in the factory for three years, and a certificate is issued to each. Any one who leaves before that period must pay expenses hitherto incurred for him by the factory. The common workers include store-room keepers, watchmen, servants, porters and coolies. Their work is subject to change. Besides the workers mentioned, four kinds of work in the factory are generally consigned to contractors; they are the lime kiln, stone breaking, loading and unloading of raw materials and temporary or emergent work. The former three are executed under a long term contract and not considered as the work of the factory proper, while the latter is frequently undertaken by the workers in the factory in their leisure hours with a view to getting some extra pay.

000 with a view to getting some extra pay.

In our investigation, workers of a temporary nature or under
461 a contract were excluded. The total number of regular workers
of the Pacific Alkali Works at the time of our investigation, was
511, of which six were foremen. They are considered superior
to ordinary workers and are often as highly paid as members on
465 the administrative staff. Their monthly wages in the various
124 kinds of work were: iron work, $75.75 (silver.); electrical work,
$52.75; casting, $42.75; moulding, $38.75; riveting, $36.75 and
carpentry, $24.75. Thus, they were also excluded in our study
and there remained 505 workers in the other five classes.
Table 41 shows the distribution and percentage of these workers.

Table 41.—Number of Workers in the Factory, by Classes

Class	Number of workers	Per cent
Mechanics	87	17
Firemen	15	2
Assistants	22	5
Apprentices	32	6
Common workers	349	70
Total	505	100

166 Most of the 505 workers came from Chihli and Shantung.
On account of the fact that a great majority of the skilled work-
464 ers were from Tientsin and Tangku, the number of workers from
Chihli far exceeded those from Shantung. This is shown in
Table 42 on the next page.

466 All affairs concerning workers are in the hands of the administrative department and, based upon reports from engineers and supervisers, a record of merit or demerit is kept of each worker. For the purpose of promoting working efficiency, the department has enforced rules governing rewards and fines. Rewards are of three kinds: (1) medal, (2) money prize and (3) wage increase. The money prize varies from one dollar to 30 dollars. Punishments also take three forms: (1) dismissal,

(2) fine and (3) wage reduction. Although chances for getting rewards and punishments are many, yet during these two years, only fines have commonly been inflicted, the amounts being from 10 to 30 cents at a time. 466

Table 42.—Nativity of Pacific Workers (According to the Factory Record) 166 464

	Number of workers	Per cent
Chihli	230	45.5
Shantung	157	31.1
Metropolitan District	24	4.8
Honan	9	1.8
Kwangtung	7	1.4
Hunan	2	0.4
Chekiang	2	0.4
Kiangsu	1	0.2
Anhwei	1	0.2
Unknown	72	14.3
Total	505	100.0

New workers are employed from time to time by the factory. As soon as the news of recruiting workers is known, the old workers usually would introduce any number of their friends for application. The applicants are, first, given a physical examination and, then, a personal interview with the head of the administrative department. If they are qualified at both the examination and the interview, they would be admitted on trial for at least two weeks. When their work proves to be satisfactory, they are then admitted as regular workers and have their wages fixed by the factory authorities. In the meantime, the factory issues a certificate to each on which are printed his name, kind of work and daily wage. According to the regulation, worker's certificates must be renewed every year and any increase in wage should be duly recorded, but this practice has not been followed. 464

The common worker may be discharged at one week's notice under any of the following conditions: (1) Too weak to do the required work. (2) Absence exceeding 50 days. (3) When a 466

466 reduction of work in the factory is found necessary. (4) Violation of the factory regulations by the worker.

The worker may request an honourable dismissal from the factory by giving a week's notice, provided that he is unable to do any more work on account of bad health or on other reasonable grounds. A certificate may be issued to him, if he so desires, stating his work, wages and the reason for his honourable discharge.

464 Owing to frequent suspension of work during the early years of the factory, many workers left the place on account of its instability. The rate of turnover was consequently rather high. It was about 20 per cent in 1926. But it may be presumed that the growing prosperity of the Company would, in time, diminish the rate of turnover.

466 It has been mentioned that soda manufacturing is entirely machine work. As many of the workers, on entering the factory, were fresh from the country and had never seen the structure and working of the complicated mechanical contrivances before, they were, at first, apt to meet with accidents of one kind or another. The engineers and their assistants had to direct and supervise very carefully their handling of machinery, in order to avoid danger. Through instruction and experience, however, accidents have been greatly reduced recently. Apart from accidents caused by machinery, burns and colds are easily contracted by firemen and boiler tenders, as they are constantly exposed to fire or excessive heat. But above all, it is the ammonia gas that affects the workers worst. It chokes them and in particular, it causes nausea and indigestion. All these conditions often bring about what may be called occupational diseases of the soda workers, but it is to be noted that the factory is now endeavouring to reduce their seriousness.

Before March 1927, the working hours were either 8 hours or 12 hours a day, but the former was considered the general rule. Those who worked 12 hours a day were given an additional 20 per cent of the daily wage as the overtime pay for the extra four hours' work. The 12-hour day has been abolished, since

March 1927 and all workers are now working in eight-hour shifts. 466 The three shifts are: (1) 6 a. m. to 2 p. m. (2) 2 p. m. to 10 p. m. and (3) 10 p. m. to 6 a. m. The change of shifts is effected once every week in the same manner as in the Chiu Ta Salt Refinery.

Some skilled workers have only one shift and they work daily from 8 to 12 a. m. and from 1:30 to 5:30 p. m. Blacksmiths may have to work longer hours, while engaged in casting. The unskilled work adopts the two-shift system which runs from 6 a. m. to 2 p. m. and from 2 p. m. to 10 p. m. There is a change of shifts every week. The working hours of the servants and cooks are not so rigidly fixed. The watchman works 12 hours a day regularly. Five minutes are allowed the worker for coming late, after which a fine of from 10 to 30 cents is imposed.

Nominally altogether 35 holidays are allowed the workers in a year, but as the machinery must be kept running throughout the whole year, holidays and Sunday rest cannot be observed. The workers are, therefore, given an extra month's pay each at the end of the year.

Workers may ask leave of absence for any of the following reasons: marriage, funeral service, sickness, and ordinary business. Workers who are absent for more than 50 days at a time are dismissed without any consideration. In the case of absence for one's own marriage or funeral of his parents, the time limit is to be fixed by the factory, according to the distance to be traversed by the worker for attending such functions; and his wage is paid as usual on such occasions. In the case of the funeral of a brother or wife, absence is permitted of one week only without any deduction of wage. Absence on account of sickness is fixed on the recommendation of the physician of the hospital. No deduction of wage is made within a fortnight. If the worker has been ill for over a month, he is sent home with one month's wage, Workers injured during work are paid wages as usual. For those disabled by accidents, suitable employment is found for them by the factory. Absence for ordinary business entails a deduction of wages according to the number of days absent.

Wage payments in the Pacific Alkali Works consist of (1) wages (2) extra month's pay (3) allowance for working overtime and (4) bonus. Extra month's pay partakes of the nature of wage in the fact that it is paid at the end of the year for work rendered during holidays. Its amount varies according to the wage scale of the worker in January. Unlike that in the Chiu Ta Factory, bonus is contingent upon the profits of the company and is paid to each worker according to his merit, No bonus is paid to the worker, if the company earns no profits in the year. As a rule, working overtime is rather infrequent in the Works, but during the period under investigation, the workers had been working 12 hours a day for eight months and they were paid for overtime work accordingly. Thus the amount is quite significant for these workers and deserves a separate classification in the group of incomes.

The following daily wage rates, excluding the commutation of gifts, for various kinds of work have been in force in the factory :—

Table 43.—The Daily Wage Scale of the Pacific Alkali Workers
(Excluding the commutation of gifts)

Kinds of Workers	Daily wage rate	
	Minimum	Maximum
Mechanics	.50 .50	1.00 .80
Electricians	.50	.80
Electricians (in charge of lighting)	.50	.60
Blacksmiths	.40	.60
Firemen	.35	.60
Stonesmiths	.40	.50
Carpenters	.30	.40
Masons	.30	.40
Apprentices	.25	.30
Common workers	.25	.30
Servants	.25	.30

It has been a practice of the factory to present clothing and edibles to the workers at festival times. As in Chiu Ta, these presents have been commuted since March 1927 to $9 a year.

As a result of the commutation of the gifts, the minimum wage of the Pacific worker was increased from $0.25 to $0.275 a day, or $8.25 a month. Newcomers who have been in the factory for less than three months are not entitled to this income and their monthly wage is therefore only $7.50.

At the time of our investigation, May 1927, it was found that the 505 workers were distributed according to the wage groups as in Table 44.

Table 44.—Number of Workers in the Factory, by Wage Groups

Monthly wages[1]	Mechanics	Firemen	Assistants	Apprentices	Common workers	Total
Under $8.25	—	—	—	17	27[2]	44
$ 8.25 and under $13.25	11	3	22	15	313	364
$13.25 and under $18.25	20	4	—	—	8	32
$18.25 and under $23.25	28	8	—	—	1	37
$23.25 and under $28.25	19	—	—	—	—	19
$28.25 and under $33.25	7	—	—	—	—	7
$33.25 and under $38.25	2	—	—	—	—	2
All wages	87	15	22	32	349	505
Average of wages	$ 20.40	$ 17.41	$ 10.19	$ 8.34	$ 9.04	$ 11.25
Median of wages	$ 19.55	$ 19.15	$ 10.75	$ 7.25	$ 8.75	$ 8.95

[1] Including the commutation of gifts.
[2] All of them had been in the factory for less than three months.

We use wage groups instead of wage scales because within the range of from $6.75 to $35.75 per month there happened as many as forty different levels. It will be seen from the table that more than three-fifths of the mechanics are above the $18.25 level, the firemen are between $8.25 to 23.25, both the assistants and the apprentices are under $13.25, and nine-tenths of the common workers, are on the $8.25 to 13.25 level.

The rate of the increase of wages is from $1 to $4 for mechanics, firemen and assistants, and from $0.40 to $1.60 for common workers and apprentices. The raise of wages is usually made in July every year, in accordance with the recommendations made by the supervisors in their reports.

II. WELFARE WORK

466 Welfare work cannot, as yet, be said to be a special feature of the Works, as it is still in its infancy. The few kinds of welfare work that the workers and members on the administrative staff are privileged to enjoy are undertaken jointly with the Chiu Ta Refinery. They are the Workmen's School, the Factory Hospital, the Cooperative Store and the Ming Shin Primary School, all of which have been dealt with in detail in a former chapter.

466 362 Dormitory.—At the time of our investigation, the Pacific workers were living in four temporary residences pending the construction of a regular dormitory.

There were six rooms in Residence A, a part of the Chiu Ta dormitory, accomodating 72 men. The arrangement and discipline in this residence were all copied from the Chiu Ta Dormitory, but as there was no daily inspection, the place was not neatly kept up. Residence B was an inn of 20 rooms in which lived 120 men, mostly skilled workers. The residence seemed to be rather overcrowded, for the size of the rooms could hardly allow six or seven persons to live in each. About thirty workers, mostly assistants and store room keepers, lived in Residence C, a mud house of 10 rooms. Two rooms were used for cooking and for meals. The place was managed by the workers alone. It was found that a remarkable degree of cleanliness, much higher than in the other residences, had been attained here. Not only the courtyard was spacious and the roofs were high, but chairs and tables were provided for those who might like to read and write letters. Residence D consisting of 8 rooms accommodated 80 persons. Large windows permitted the rooms to be flooded with light, but the ceiling was rather too low.

It has been observed that conditions of the four residences differ from one another. If two of them seem to be fairly satisfactory, the other two leave much to be desired. It seems impossible for the factory authorities to enforce rules of sanitation and discipline in all the residences, as they were widely scattered, and to do so would entail extra services and extra men

on the part of the factory. It is hoped that when the new dormitory 466
is completed, the workers might find a better environment 362
to live in.

Food, Fuel and Light.—As far as possible, every facility 466
is accorded by the factory to its workers, in order to make their 365
living comfortable. A few of these facilities may now be mentioned.
There is an artesian well drilled by the factory and fresh
water from the well is distributed free to the various residential
quarters of the workers. Stoves and coal that are needed in
the worker's quarters in the winter are also provided by the
factory. For meals, workers have the option of using the dining
room of the Chiu Ta dormitory or doing their own cooking. In 252
the former case tickets for buying meals are advanced to the 466
workers, the value of which is deducted from their pay at the end
of the month. In the latter case, stoves, coal and other cooking
facilities are furnished. A third alternative adopted by some
workers is to form a group whose members agree to have their
meals provided by a special cook. In this case, both the cooking
service and coal for the fire are provided free by the factory.
There were at the time of the investigation two groups of this
kind in existence. The one in Residence B consisted of about
thirty members, each of whom paid about $6.50 a month for food.
The kitchen service was supervised by the workers who served
in groups of two by rotation. In Residence C, about twenty
workers formed a group and each paid about $5.50 a month for
food. A committee composed of the representatives of all the
rooms in the residence supervised the kitchen service, but, in fact,
the work was delegated to its chairman alone.

Sanitary Conditions.—As the Factory Hospital is a cooperative 466
enterprise of Chiu Ta and the Pacific Alkali Works, workers
belonging to the latter are, therefore, accorded the same treatment
in the hospital as those of the former. Facilities for haircutting
and bathing are also afforded the Pacific workers at the
Chiu Ta barber shop and bath room. Arrangement has been made 515
by the factory with a bath house in the town where the Pacific
workers may take baths at regular intervals, free of charge. The
bath is regularly frequented by them.

bath is regularly frequented by them.

Compensation.—According to the regulations of the factory, workers are compensated under any of the following conditions: (1) death in connection with the performance of duty, (2) death as a result of sickness, (3) accident or disability owing to factory work.

To a common worker who died in connection with his work, the factory gives a coffin and burial garments to the value of $60; and, in addition, compensation is given to this family according to the schedule in the following table.

Table 45.—Amount of Compensation for Workers, According to Number of Years in the Factory

Number of years in the factory	Amount of compensation
Less than 1 year	One month's pay for every month in the factory
1 year and under 2 years	pay of 6 months
2 years and under 4 years	pay of 10 months
4 years and under 6 years	pay of 18 months
6 years and under 8 years	pay of 24 months
8 years and under 11 years	pay of 30 months
11 years and over	pay of 36 months

The amount of compensation may be increased with the consent of the general manager, if the worker has rendered meritorious service to the factory. An additional three months' pay may be given to the family, if the worker leaves no offspring to look after it. Passage money may be given to the family of the deceased worker for returning home.

A worker who died of illness will receive a coffin and burial garments worth about $60. and also the wage of the month in which his death occurs. If the deceased worker has been in the employ of the factory for more than two years, special compensation may be given, in addition to the above. Passage allowance may also be given to the family, if it is too poor to travel back to its home.

The worker who is injured or disabled owing is factory work is compensated according to the degree of disability. (1) For total disablement, the total amount of compensation as stated in 466 Table 45 is given. (2) For partial disablement which renders the worker unable to pursue any more his original occupation, 70 per cent of the compensation is given. (3) Where disablement renders the worker defective but does not interfere with the pursuit of his original work, 50 per cent of the compensation is given.

The Family Remittance.—The family remittance system in this factory is the same as that in Chiu Ta. Given the address and the name of the recipient, the factory will send the money to the home of the worker without charge. There were about thirty workers remitting money home through the factory every month and the total amount of remittances was about $1,000 a year.

III. A SAMPLE STUDY OF 50 PACIFIC RESIDENT WORKERS.

Out of 505 workers in the Works, 53, that is a little less 124 than one-tenth, were investigated. Three apprentices were excluded from this number, because their standard of living was different from that of the other workers. We are thus left for our study only data for 50 workers. The data of the cost of living refer to the yearly period, July 1926 to June, 1927, a period of normal conditions and comparative tranquillity. It is shown in Table 46 that assistants, being 31.8 per cent of the total of that class, are better represented than any other class of workers. Firemen

Table 46.—Total Number of Workers and Number of Workers Investigated, by Classes

Class of workers	Total number of workers	Workers investigated	
		Numbers	Per cent
Machanics	87	10	11.3
Firemen	15	4	26.6
Assistants	22	7	31.8
Common workers	349	29	8.3
Apprentices	32	—	—
Total	505	50	9.9

124 represent 26.6 per cent of the total of that class, mechanics 11.3 per cent, and common workers 8.3 per cent.

162 Regarding the nativity of the 50 workers under investigation, most of the mechanics and assistants were from Chihli and most of the firemen and common labourers from Shantung. This reflects in general the nativity distribution of the total number of workers.

The age of the 50 workers was comparatively young, for 23 of them were below the age of 25, 18 between the ages of 26 and 35, and 9 between the ages of 36 and 40. No worker was older than 40.

463 Table 47 shows the kinds of work and working hours of the 50 workers. Mechanics, firemen and assistants generally have fixed work, while common labourers often change their jobs in the factory.

Table 47.—Kinds of Work and Working Hours of 50 Resident Workers

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Class of workers		Working hours	Number of workers
	Mechanics	8	10
	Firemen	8	4
	Assistants	8	7
Common workers	Soda worker	8	13
	Cleaner	8	5
	Repairing	8	2
	Store keeper	8	2
	Sundry job worker	8	1
	Coal-carrier	8	1
	Tea-room attendant	12	1
	Watchman	12	3
	Dustman	indefinite	1
	Total		50

463 The various kinds of occupation which these workers had pursued before they joined the factory were as follows: farmers 22, artisans and workers 12, coolies 5, merchants 7 and students 4. Mechanics, being skilled workers, are recruited largely from

those who had experience in other places. As the assistants are 463 required to know some elementary English and arithmetic, most of them were students of primary schools. The majority of the common workers, however, come from the farmer class.

As shown in Table 48, the size of the family of these 50 162 workers varied from 2 to 16 members, with an average of 6.4 persons to a family. About 56 per cent of the families had from 3 to 6 members to a family. It appears that the constitution of these families is by no means homogeneous. Such members of the family as parents, brothers, sisters, sister-in-law, nephews, nieces etc. constituted as much as 68 per cent of the total.

Table 48.—Size and Member Relationship of 50 Families

Number of Persons in Family	Number of Families	Per cent
2	3	6
3	5	10
4	6	12
5	8	16
6	9	18
7	4	8
8	3	6
9	3	6
10	4	3
11	2	4
12	2	4
16	1	2
Total	50	100

Average number of persons per family 6.4

Number Relationship	Number	Per cent
Head of families (i. e. workers)	50	15.6
Wives	20	6.3
Sons	17	5.3
Daughters	15	4.7
Fathers	29	9.1
Mothers	40	12.5
Brothers	67	20.9
Sisters	13	4.1
Sisters-in-law	23	7.2
Nephews	22	6.9
Nieces	12	3.8
Uncles	5	1.5
Aunts	4	1.2
Grandfathers	1	0.3
Grandmothers	2	0.6
Total	320	100.0

The economic condition of the 50 families varies. Generally 423 speaking, firemen and common workers came from country districts of Chihli and Shantung and they had small lots of land to maintain the livelihood of their families. The families of mechanics lived mostly near Tientsin and they depended primari-

423 ly on their skill to make a living. Whatever little property they might have was not sufficient for the subsistence of their families, and they must have depended upon their earnings to support them.

Table 49.—Value of Property of the Families of 50 Resident Workers

Value of property	Number of worker's families
Under $1.000	23
$1.000 and under $2.000	14
$2.000 and under $3.000	7
$3.000 and under $4.000	1
$4.000 and under $5.000	1
Families owning properties	46
Families owning on property	4
Total	50

The assistants, as a rule, were young and capable of self-support, as the family burden was usually borne by their fathers or brothers. Their economic conditions were, therefore, comparatively better.

It was found that 46 of the workers had some property. The estimated value of the properties is distributed as in Table 49.

162 Of the 50 workers, 22 were married, but two of them later became widowers. The ages of marriage of the 22 couples are

Table 50.—Age of Marriage of 22 Couples

Age of marriage	Husbands	Wives
11–15	2	4[1]
16–20	12	16
21–25	7	2
26–30	1	—
Total	22	22
Average age of marriage	19.4	17.9[2]

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[1] Two of this group were daughters-in-law-to-be who began to live with her furture husband's family at this early age.

[2] Excluding two daughters-in-law-to-be.

shown in Table 50. Excluding the two daughters-in-law-to-be, 162 the earliest age of marriage was 14. Most girls were married before 20 and none of them among this group of families were married after 21. The difference of age between husband and wife is about 2 years either way.

The educational standard of the various classes of workers 212 differs from one another. For instance, the work of the assistants is such that they all should receive some education and consequently no illiterate could be found among their class. Table 51 shows the distribution of literacy and illiteracy of the 50 workers to be 34 and 16 respectively. The percentage of illiteracy was higher among firemen and common workers than in the other two classes.

Table 51.—Literacy and Illiteracy of 50 Resident Workers

Class of workers	Total number of workers investigated	Illiterates	Literates	
			Those who can not read newspaper	Those who can read newspaper
Machanics	10	1	3	6
Firemen	4	3	—	1
Assistants	7	—	1	6
Common workers	29	12	10	7
All classes	50	16	14	20

It was further found that out of the 50 workers, 20 had received 871 no education whatsoever, while the others were either graduates of primary schools or of private schools. Only seven of them were found at the time of investigation to attend the Workmen's School of the factory, the others being contented with little or no education.

The income of the Pacific workers as has been mentioned, 434 is derived from four different sources (1) wages (2) allowance for working overtime (3) extra month's pay and (4) commutation of gifts. All these items of income of the 50 resident workers were confined to the yearly period, July 1926 to June 1927 and

434 calculated according to what these workers actually earned. In case of absence, deductions from wages are made accordingly.

Table 52.—Sources and Amounts of Income in One Year of 50 Pacific Resident Workers, by Classes

Class of workers	Number of workers	Average annual income from—				Total average income per worker
		Wages	Allowance for working overtime	Extra month's pay	Gift commuted	
Mechanics	10	$232.52	$ 27.91	$ 18.38	$ 9.00	$ 287.81
Firemen	4	162.31	4.20	12.60	9.00	188.11
Assistants	7	110.01	15.92	8.34	8.99	143.26
Common workers...	29	97.62	12.77	6.87	8.94	126.21
All classes......	50	131.51	15.55	9.84	8.96	165.87
			PER CENT			
Mechanics	20	80.8	9.7	6.4	3.1	100.0
Firemen	8	86.3	2.2	6.7	4.8	100.0
Assistants	14	76.8	11.1	5.8	6.3	100.0
Common workers...	58	77.3	10.1	5.4	7.1	100.0
All classes ...	10.0	79.3	9.4	5.9	5.4	100.0

The income of the Pacific workers is most conveniently analyzed according to the kinds of work they do, as there are different scales of pay for each. In Table 52, it is shown that the average wage represents 79.3 per cent of the total average income and the pay for overtime work, 9.4 per cent. These two items together constitute 88.7 per cent of the total average income. The extra month's pay and commutation of gifts were, respectively, 5.9 per cent and 5.4 per cent of the total average annual income.

511 Table 53 shows the expenses for the following five groups: food, clothing, travelling expenses, social expenses, and miscellaneous expenses.

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262 Food constituted 63.9 per cent of the total expenses. It was the highest among the mechanics, 67.1 per cent, and the lowest among the common workers, 63.7 per cent. As has been mentioned

Table 53.—Average Amount and Per Cent of Expenditure in One Year for the Principal Groups of Items of Cost of Living of 50 Pacific Resident Workers, by Classes

Class of workers *	Number of workers	Average annual income	Average annual expenses per worker for—					Total average annual expenses per worker
			Food	Clothing	Travelling expenses	Social expenses	Miscellaneous expenses	
Mechanics	10	$ 287.81	$ 87.63	$ 20.48	$ 1.61	$ 7.40	$ 13.39	$130.51
Firemen	4	188.11	82.20	18.40	11.76	12.78	11.89	137.03
Assistants	7	143.26	75.34	23.56	0.03	10.08	12.28	121.29
Common workers	29	126.21	68.31	20.34	2.62	6.58	9.31	107.16
All classes	50	165.87	74.27	20.66	2.79	7.73	10.75	116.20
			PER CENT					
Mechanics	20	....	67.1	15.7	1.2	5.7	10.3	100.0
Firemen	8	....	60.0	13.4	8.6	9.3	8.7	100.0
Assistants	14	....	62.1	19.4	—	8.3	10.1	100.0
Common workers	58	....	63.7	19.0	2.4	6.1	8.7	100.0
All classes	100	....	63.9	17.8	2.4	6.7	9.2	100.0

511 262 above, mechanics generally eat somewhat better food than assistants and the food cost of the former is about $1 per month more expensive.

511 The assistants spent $23.56 or 19.4 per cent of total expense a year on clothing, the amount being comparatively more than that of any other class of workers in the factory. They were generally young and paid more attention to their dress. Mechanics generally earned more income and were apt to spend more on their dress. Firemen, on account of the nature of their work, spent comparatively less on clothing.

While not many Pacific workers asked leave of absence for visiting homes, the number of such workers was especially small among those investigated. It appeared that only six mechanics had visited their homes, but as they were situated near Tientsin, the amount of passage money was naturally very small. Three out of the four firemen who went home spent about 9 per cent of the total expenses on travelling as the distance traversed was fairly long.

Social expenses did not play an important part among the Pacific workers. An ordinary worker spent on this item only $6 a year. There were, however, a few workers who spent more.

Miscellaneous expenses include those for sanitation, tea and tobacco, amusements, new year entertainment and utensils. The assistants had more sanitary and amusement expenses than other workers. The new year expenses corresponded rather closely with the income of these workers.

It appeared from the figures that, food, clothing, social and miscellaneous expenses were closely correlated with the income. Travelling expenses, however, usually vary not according to income but according to the distance between the worker's homes and the factory, and also the number of visits to home.

511 434 The assets and liabilities of the 50 workers are shown in Table 55. (It is to be noted that two classes of workers, mechanics and firemen, were better off and incurred no deficit. In the other two classes, one assistant had a deficit of $5.43 and three common workers had on the average a deficit of $22.98.

Table 54.—Average Amount of Expenditure in One Year For Items in the Miscellaneous Group, by Classes of Workers

Class of workers	Number of workers	Average annual income	Average annual expenses per worker for—					Total average annual miscellaneous expenses per worker
			Sanitary expenses	Tea tobacco etc.	Amusement	New year entertainments	Utensils	
Mechanics	10	$ 287.61	$ 3.77	$ 3.94	$ 1.57	$ 3.15	$ 0.97	$ 13.39
Firemen.....................	4	188.11	2.72	3.40	2.37	2.75	0.70	11.89
Assistants..................	7	143.26	4.06	2.19	3.14	1.86	1.03	12.28
Common workers......	29	126.21	1.96	4.71	0.51	1.63	0.50	9.31
All classes	50	165.87	2.68	4.09	1.24	2.06	0.63	10.75

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Table 55. Average Amount of Surplus, Deficit, Family Remittance and Borrowing in One year of 5o Pacific Resident Workers, by Classes

Class of workers	Number of workers	Average annual income	Average annual expenditures	Surplus		Deficit		Average surplus (+) or deficit (—) for class	Number of remitters	Averge amount of family remittance of		Number of borrowers	Average amount of borrowing of	
				Number of workers	Average amount	Number of workers	Average amount			Remitters	Class		Borrowers	Class
Mechanics	10	$287.81	$130.51	10	$157.30	—	—	+ $157.30	9	$109.44	$98.50	1	$10.00	$1.00
Firemen	4	188.11	137.03	4	51.08	—	—	+ 51.05	4	59.25	59.25	1	10.00	2.50
Assistants	7	143.26	121.29	6	26.53	1	5.43	+ 21.96	4	16.25	9.29	1	20.00	2.86
Common workers.........	29	126.21	107.16	26	23.90	3	22.98	+ 19.05	23	30.13	23.90	5	8.00	1.38
All classes	50	165.87	116.20	46	55.60	4	18.59	+ 49.67	40	49.50	39.60	8	10.00	1.60

It was found that these three common workers spent more than 511
$30 on clothing, while the average amount for the 50 workers 434
was about $20. Moreover, their expenses for tea and tobacco were also much higher than the average amount. It seemed that of the four classes of workers, the mechanics were quite well off and each had $157.30 surplus. Next came the firemen, each having a surplus of $51.05. Even among the assistants and common workers, they had, on the average, some surplus, the former having about $22 and the latter $19 in a year. If we compare this group of workers with that of Chiu Ta with respect to its financial condition we shall find that the Pacific workers are much better off.

Family remittance is the most important item which consumes their surplus. Mechanics who had, on the average,, each a surplus more than $150 remitted to their homes about $110 each. The assistants remitted comparatively small sums of money to their homes. It is to be noted that the amount remitted by firemen and common workers exceeded their surplus.
In such cases, the workers often resorted to borrowing. Of the 426
50 workers, only 8 borrowed money, the average amount being $10. Such kind of borrowing often comes from relatives or friends and no interest is charged.

Apart from the family remittance, three ways of disposing 426
the surplus are open to the workers: investing it in a co-opera- 452
tive loan society, lending it to others or buying property. There are also three ways to make up the deficit, besides borrowing: namely, borrowing from the co-operative loan society, pawning and selling articles. Workers that resorted to pawning and selling articles to meet their deficits were so few among the Pacific workers that they do not merit our attention. However, 10 of the workers under investigation joined the co-operative loan societies.

CHAPTER VII

CONCLUSION.

124 The present inquiry covers a period of three months, from May to July, 1927. Facts regarding the general features and welfare work of the factories under investigation were chiefly derived from factory records and personal interviews, while the study of cost of living was entirely based upon the schedules of 197 workers, of which 86 were Chiu Ta resident workers, 61, Chiu Ta non-resident workers, and 50, Pacific resident workers. The workers were selected at random; the proportions between the total number of workers and number of workers investigated were 4:1 for Chiu Ta resident workers, 2:1 for families of Chiu Ta workers, and 10:1 for Pacific workers.

463 At the very beginning of the investigation, there were 556 workers in the Chiu Ta Factory, of whom 75 were skilled. The unskilled labourers were mostly employed in the work of salt refining which requires neither knowledge nor experience of a technical nature; the skilled labourers were engaged in subsidiary work, such as tending the electric plant, manufacturing iron and wooden implements, etc. The Chiu Ta Salt Refinery required only workers of good health and physical strength, while the Pacific Alkali works needed skilled ones. Manufacturing soda by the Solvay process is entirely done by modern machinery and the workers have been graded into classes. Besides the 6 foremen in different fields of skilled work, the Works employed in May 1927, 87 mechanics, 15 firemen, 22 assistants, 32 apprentices and 349 common labourers. In spite of the large majority of common labourers, it was the mechanics, firemen and assistants who formed the backbone of the factory. This is the main difference in the aspect of labour employment between the two factories which are situated together and related in administrative policies.

000 The workers of these two factories, as shown by their nativity

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The workers of these two factories, as shown by their nativity and previous occupations, were largely recruited from the farmer 369 class of Chihli and Shantung. This movement from country to town is rather significant. It appears to be a natural phenomenon in the industrialization of China. As political and economic conditions of the country improve, industry will surely develop, and the migration of working population from agricultural to industrial field together with the rise of industrial towns will undoutedly be still greater with the consequence that social conditions of this country will be greatly changed.

Both factories have adopted the eight-hour day since March, 466 1927. Workers, with a few exceptions, have been arranged into shifts and changes of shifts are effected every Sunday. This system, popular as it is in western factories, is not generally practiced in this country. Factory employers, governmental officials and even managers of foreign factories hesitate to adopt this system on the ground that Chinese labourers are not so efficient as foreigners. Chiu Ta and Pacific, although not the first to make this venture, however, supply a good illustration that the system can work well in China as well as in western countries. It has been proved that the eight-hour day not only gives spare time to the workers for recreation and intellectual pursuits, but also increases their efficiency to some extent. We hope that the experience of these two factories will convince employers in China, both foreign and Chinese, of the benefit of adopting the eight-hour day.

With regard to rest and holiday, Pacific Works gives in fact none, while the Chiu Ta Factory gives only 8½ days in the whole year. It is the opinion of the factory authorities that a rest day is unnecessary unless the worker knows how to utilize it, so they are liberal in granting leave of absence instead of giving the usual Sunday rest. Any worker may ask leave of absence for accident, sickness, marriage, or funeral service with pay, or for ordinary business without pay. The time for absence is either determined by the factory physician in case of accident or sickness, or limited to a certain number of days in other cases.

The welfare work of these factories also needs special

466 mention. A factory hospital, a workmen's school and a consumers' co-operative store are operated by both factories, while the Ming Hsin Primary School, supported by the Chiu Ta Factory, provided excellent educational facilities for children of workers and staff members. The Chiu Ta Factory, operating ten years earlier than the Pacific, surpasses the latter in several respects of welfare work. There are in the Chiu Ta Workmen's Dormitory, 40 bed rooms, 5 sickrooms, 2 classrooms and rooms for dining, bathing, laundry and other purposes. The factory supplies fuel, light and water free, food at cost and barber service at a very reasonable rate. As to recreation, indoor and outdoor games, typical Chinese New Year amusements, summer conference and modern plays are open to all. Houses are rented to the families of workers at a very moderate rate. Refined salt and wood shavings are given to them free from time to time. Besides, systems of savings deposit and family remittance have been installed to encourage thrift among the workers, and the Mutual Aid Society has been organized to help workers in emergency. The Pacific Alkali Works, handicaped by financial conditions, only provides, at the expenses of the factory, dormitory, fuel and light, water and service of family remittance, but the workers are allowed to enjoy some of the benefits of Chiu Ta workers. All these services, especially those of Chiu Ta, have reduced the living expenses of the workers, by so much that in reality they amount to additional wages.

465 The earnings of both Chiu Ta and Pacific workers consist of wages, extra month's pay, allowance for working overtime and the commutation of gifts ; but to the Chiu Ta workers, two kinds of bonus, general and salt, should be added. Except the wages of apprentices, both factories have fixed the minimum wage at $7.50 a month, or $8.25 a month including the commutation of gifts. The general average of monthly wages is $10.50 for Chiu Ta and $11.25 for Pacific. This difference is chiefly due to the fact that the latter has more highly-paid skilled labourers than the former. If we calculate the wages on a daily basis and compare them with those of the factory workers in Tientsin at

the end of 1927[1], it will be found that the minimum wage and the mode of wages in Tangku were slightly lower than those in Tientsin (see the table following). However it does not follow 465

Daily Wages	Tangku		Tientsin			
	Chiu Ta	Pacific	Cotton mill	Tobacco factory	Match factory	Flour mill
Maximum	$1.06	$1.16	$1.25	$0.97	$1.00	$1.00
Minimum	0.25	$0.25	0.30	0.18	0.30	0.40
Mode	0.25	$0.25	0.50	0.40	0.50	0.60

that factory workers in Tangku were less paid. On the one hand, the monthly wages are supplemented by other payments as indicated above; on the other, they are furnished with every convenience of living which serves directly or indirectly as wage equivalent. Taking all the factors in consideration, the real income of the Chiu Ta and Pacific workers far exceeds that of the workers of other factories.

The sources and general average of the incomes actually earned by the 197 workers investigated during the yearly period July 1920-June 1927 may be summarized in the following table. 434

	Wages	Extra month's pay	Allowance for working overtime	Gifts commuted	General bonus	Salt bonus	Gratuities	Total average income
86 Chiu Ta resident workers	$107.72	$8.42	$0.09	$8.95	$17.41	$13.74	—	$156.33
61 Chiu Ta workers having families	141.56	11.36	0.42	9.00	21.83	5.62	$2.42	192.27
50 Pacific resident workers	131.51	9.84	15.55	8.96	—	—	—	165.87
	PER CENT							
86 Chiu Ta resident workers	68.9	5.4	0.1	5.7	11.1	8.8	—	100.0
61 Chiu Ta workers having families	65.6	5.3	0.2	4.2	10.1	2.6	1.1	100.0
50 Pacific resident workers	79.3	5.9	9.4	5.4	—	—	—	100.0

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[1] The data were kindly supplied by the Chamber of Japanese Merchants in Tientsin.

434 It will be noted that the monthly wages of workers, although the most important item of income, only constituted 65.6 per cent to 78.3 per cent of the total income. The remaining 20 to 35 per cent was derived from other forms of wage payments, of which the general and salt bonus of Chiu Ta and the overtime allowance of Pacific were the most significant. Of course, the total incomes of the workers having families were not necessarily the total incomes of their families. The percentages of various items of income of the 61 families are as follows:

Principal earners.	Other family member	Contributions of brothers and sons	Interest, rent and profit	Remittance from native place
89.1 per cent	5.8 per cent	2.6 per cent	1.9 per cent	0.6 per cent

511 Having been provided with dormitory and fuel and water by the factories, the resident workers of both the Chiu Ta and the Pacific factories were relieved from the expenses on these two items. The expenditure of the 197 workers studied should be treated in two groups, one for resident workers, the other for families of Chiu Ta workers. The following is the percentage expenditure of the 136 resident workers.

	86 Chiu Ta Workers	50 Pacific Workers
	per cent	*per cent*
Food	62.7	63.9
Clothing	15.2	17.8
Travelling expenses	4.6	2.4
Social expenses	8.3	6.7
Miscellaneous expenses	9.2	9.2
All expenses	100.0	100.0

It is interesting to note that the percentages of miscellaneous expenses are exactly the same for the workers of both factories. As the percentages on social and travelling expenses of Chiu Ta workers are greater than those of Pacific, the percentage of food and clothing expenses of the former are correspondingly smaller than those of the latter. Except a few mechanics and assistants who had organized groups for cooking better food, the common workers spent almost 90 per cent of their food expenditure on cereals, having only little left for vegetables and meat. It has been estimated by the investigator that the average number of calories yielded by the diet of the Chiu Ta workers is about 3,500, which is sufficient for a factory worker. In the miscellaneous group, expenses for tea and tobacco are the most important. It was found that more men indulged in drinking tea than in smoking tobacco, and the former is a much less expensive item.

The percentage expenditure of the 61 working families is as follows:

Food	55.7 per cent
Fuel and light	8.1 per cent
Rent	7.1 per cent
Clothing	9.5 per cent
Miscellaneous	19.6 per cent.

The food expenses include cereals, vegetables, condiments, meat and refreshments. Wheat and corn flour are most commonly used. The appetizer consists mostly of salted vegetables and shrimp sauce. House rents are comparatively low, because these working families lived in cheap houses which were either rented at a low rate by the factory, or situated far from the town. The average number of equivalent adults in one room is 2.3. The high percentage of the miscellaneous expenses is generally due to the heavy charges for marriage or funeral service. The non-resident workers have more items in the miscellaneous group than the resident workers, but their expenses for amusement, tea and tobacco are comparatively little.

As a rule, the earnings of the workers in the whole year were sufficient to meet the ordinary expenditure of the same period. In case of special expenses, the workers had to resort to borrowing. Out of the 197 workers investigated, 37 had incurred debts. Marriage and funeral service are responsible for deficits of both resident workers and workers having families, while travelling expenses and family remittance rendered one resident worker

511 falling into debt. The average annual amounts remitted home by each resident worker in Chiu Ta and Pacific were $38.71 and $37.60 respectively. Some of the 61 working families, instead of remitting savings home, depended upon contributions from brothers, sons, and other relatives at their native places to make both ends meet.

The findings of this investigation having been reviewed, it may be concluded that the working conditions and welfare work of the Chiu Ta and Pacific factories are quite commendable. The livelihood of the workers, as compard with that of workers in many other districts of this country, is indeed satisfactory, though there is still considerable room for improvement.

APPENDIX I

Statistics of Cases Treated by the Hospital of the Chiu Ta Salt Refinery and the Pacific Alkali Works During the Period October 1, 1924 to September 30, 1925

(Total average number of workers throughout the year=900)

			1924			1925								
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
Medical Department	Digestive System	Mouth	3	17	4	18	3	19	8	12	2	8	3	9	106
		Stomach & Intestine	109	89	48	84	64	89	114	97	203	406	314	404	1021
		Bile System & Peritoneum	—	—	—	—	—	—	2	1	1	—	—	—	4
	Respiratory System	Trachea & Bronchi	6	17	56	43	48	50	68	30	11	16	47	16	408
		Lungs	—	—	3	2	3	4	2	15	1	2	3	—	35
		Pleura	—	—	—	—	—	—	—	14	4	10	—	—	28
	Circulation System	Heart	6	7	17	5	1	—	1	20	27	17	11	1	113
		Blood Vessels	—	—	—	—	—	—	—	—	—	—	—	—	—
	Excretory System	Kidney	—	—	—	—	—	—	—	—	—	—	—	2	2
		Urinary Bladder	—	—	—	—	—	—	—	—	—	3	1	1	5
	Nervous System	Brain & Spinal Cord	—	—	—	—	—	—	—	7	—	—	—	—	7
		Peripheral Nerves	—	4	4	—	1	1	1	25	5	14	—	1	56
		Organs of Special Senses	—	17	2	1	—	4	—	—	2	2	1	14	43
	Infectious & Contagious Diseases		3	1	—	—	—	—	—	—	—	7	27	18	56
	Systematic & Blood Diseases		73	62	22	36	28	124	104	174	161	177	85	148	1194
	Poison		—	—	—	1	—	—	—	1	—	—	—	—	2
Total number of cases in medical department			200	214	156	190	148	291	300	396	417	662	492	614	4080

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APPENDIX I.—*Continued*

				1924			1925									
				Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
Surgical Department	Head and Neck	Soft Tissue	Inflammation	3	9	9	49	32	31	75	2	68	12	21	88	399
			Injury	31	5	1	21	28	52	5	7	4	8	15	19	196
			Tumor	—	1	—	3	2	3	3	7	6	17	14	12	68
		Bones	Inflammation	—	—	—	—	—	—	—	—	—	—	—	—	—
			Injury	—	—	—	—	—	—	2	—	—	—	—	—	2
			Tumor	—	—	—	—	—	—	—	—	—	—	—	—	—
		Joints	Inflammation	—	—	—	—	—	—	—	—	—	—	—	—	—
			Injury	—	—	—	—	—	—	—	—	—	—	—	—	—
			Tumor	—	—	—	—	—	—	—	—	—	—	—	—	—
	Chest, Spinal Column and Abdomen	Soft Tissue	Inflammation	4	5	17	8	19	9	1	76	119	127	55	39	479
			Injury	3	—	—	—	—	—	45	4	—	—	—	—	52
			Tumor	—	—	—	—	—	—	4	1	—	—	—	—	5
		Bones	Inflammation	—	—	—	—	—	11	—	4	—	1	1	—	17
			Injury	—	—	—	—	—	—	—	—	4	2	—	—	6
			Tumor	—	—	—	—	—	—	—	—	—	—	—	—	—
		Joints	Inflammation	—	—	1	—	—	—	2	3	—	3	—	—	9
			Injury	—	—	—	—	—	—	—	—	—	—	—	—	—
			Tumor	—	—	13	—	—	—	—	—	1	—	—	—	14
	Extremities	Soft Tissue	Inflammation	57	35	95	95	130	116	108	151	154	152	116	184	1393
			Injury	24	42	46	—	76	11	97	71	33	99	178	125	802
			Tumor	19	—	2	—	—	—	—	—	—	—	1	4	26
		Bones	Inflammation	—	—	—	—	—	—	—	1	—	—	—	—	1
			Injury	—	—	—	—	—	—	—	8	30	31	31	16	116
			Tumor	—	—	—	—	—	—	—	—	—	—	—	—	—
		Joints	Inflammation	1	—	—	—	—	—	—	—	—	—	25	—	26
			Injury	—	1	—	—	—	—	—	—	—	—	—	—	1
			Tumor	—	—	—	—	—	—	—	—	—	—	—	—	—
Total number of cases in Surgical Department				142	98	171	176	287	246	342	335	419	452	457	487	3612

APPENDIX I.—*Continued*

			1924			1925									Total number of cases in the year
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	
Dermatology Department	Inflammatory		8	22	4	28	46	28	34	13	16	23	103	112	437
	Parasitic		8	11	3	14	4	13	19	16	19	11	8	1	127
	Local Infection		7	—	—	—	6	6	23	—	—	—	3	11	56
	Chronic Infection		—	—	16	—	—	—	—	—	—	—	—	—	16
	Hypertrophic		—	—	4	—	—	3	1	—	—	—	—	—	8
	Atrophic		—	—	—	—	—	—	—	2	—	—	—	—	2
	Anomalies of Secretion		—	—	4	2	—	—	—	—	—	12	19	—	37
Total number of cases in dermatology department			23	33	31	44	56	50	77	31	35	46	133	124	683
Ophthalmology Department	Eyelids		7	7	7	—	23	30	14	36	9	13	17	10	173
	Conjunctival		4	6	[illegible]	11	1	21	26	14	16	8	5	25	147
	Cornea		—	—	23	1	—	—	—	—	—	10	4	—	38
	Sclera & Telous-capsule	Iris	—	—	—	—	1	—	19	8	2	—	1	—	31
		Ciliary Body	—	—	—	—	—	—	—	—	—	—	—	—	—
		Choroid	—	—	—	—	—	—	—	—	—	—	—	—	—
	Retain. Optic Nerve		—	—	—	—	—	—	—	—	—	—	—	—	—
	Hyperopia		—	—	—	—	—	—	—	—	—	—	—	—	—
	Myopia		—	—	—	—	—	—	—	—	—	—	—	—	—
	Lens-cataract		—	—	—	—	—	—	—	—	—	—	—	—	—
	Ocular Muscle & Arhit		—	—	—	—	—	—	—	—	—	—	—	—	—
Total number of cases in ophthalmology Department			11	13	40	12	25	51	59	58	27	31	27	35	389

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APPENDIX I.—*Continued*

		1924			1925									Total number of cases in the year
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	
Ears	External Auditory Channel	21	—	1	—	—	13	—	1	1	—	8	5	50
	Drum Membrane	—	—	—	—	—	—	—	—	—	—	—	—	—
	Middle Ear	1	17	—	—	—	—	—	1	31	2	13	—	65
	Internal Ear	—	—	—	1	3	—	—	—	—	—	—	—	4
	Auditory Nerve	—	—	—	—	—	—	—	—	—	—	—	—	—
Nose and Throat	Nasal Covities	—	—	1	—	1	—	3	—	—	—	1	—	6
	Highmor's Cavities	—	—	—	—	—	—	—	—	—	—	—	—	—
	Pharynx	2	20	18	18	18	4	4	8	9	—	30	29	160
	Throat	—	5	—	—	—	2	—	3	—	—	—	—	10
Total number of cases in ears, nose & throat department		24	42	20	19	22	19	7	13	41	2	52	34	295
Grand Total		400	400	418	441	538	657	785	833	939	1193	1161	1294	9059

1. Of the five departments, medicine, surgery, dermatology, ophthalmology, and ears, nose and throat, the department of medicine claimed the largest number of cases. One half of the total number of cases in this department was stomach and intestine diseases, of which diarrhea (not bacillery dysentery) constituted more than 70 per cent, while next to them ranked systematic and blood diseases, of which cold comprised 80 per cent. Cold develops either into coughs or pains on the shoulders, waist, back or heels. This is rather common with such workers as the salt boilers in the Chiu Ta Factory and firemen or carriers in the Pacific Alkali Works. The other 20 per cent of cases of systematic and blood diseases was due to insufficient nutrition.
2. In the department of surgery, the greatest number of cases was inflammation, mostly on soft tissues of the extremities and comparatively less on soft tissues of chest, spinal column and abdomen, head and neck. Cases of injury ranked next to inflammation. Of all inflamation cases in the surgical department, burns constituted less than 20 per cent. One-sixth of this was bodily inflammation, particularly common among such workers as salt boilers and firemen, while five-sixths consisted of burns, on extremities, head and neck and one or two cases of local burns, common among salt boilers of the Chiu Ta Factory and workers of the iron workshop and lime kiln of the Pacific Alkali Works.
   Injuries are usually not serious. Cases of severe injuries were less than 20.
3. Eczema of scrotum was the most common type of inflammatory skin diseases common among salt boilers, salt bakers and firemen of the Chiu Ta Factory. Next in order were parasitic scabies, of which there were about 60 cases.
4. In the dermatology department, statistics were kept only of skin diseases but not of venereal cases which were very rare.
5. In the department of ophthalmology all cases were conjunctivities. About 100 cases of trachoma were reported.
6. The majority of the cases of contagious diseases was malaria.
7. There were only two or three cases of pulmonary tuberculosis. About the same number were cases of syphilis, the patients of these cases being either cured or discharged.
8. Sickness occurred most frequently from June to September, somewhat less frequently from February to May, and comparatively few from October to January.
9. The total number of cases in this table is 9059. Calculating on the basis of 30 days a month and 12 months a year, the average is about 25 cases per day.

19. As to the result of treatment, cases of "not treated" or "unknown" constituted a little more than 2 per cent of all cases.

APPENDIX II

SCHEDULES FOR INVESTIGATION

A. SCHEDULE FOR THE INVESTIGATION OF RESIDENT WORKERS

Schedule No.
Name of investigator.
Date of investigation.
Name of factory.
Type of factory.

I. 1. Name of worker Registered number in factory.
2. Birth place Province District.
3. Length of employment in the factory.
4. Through whose introduction ?
5. Kind of work engaged in at the factory.
6. Do you have work at other places besides the factory work?
7. Occupation previous to joining the factory.
8. Why discontinued ?
9. How long have you been away from home ?
Reasons for leaving home.
10. Home address Province District.
11. Number of persons living at home.

	Age	Occupation	Age of marriage
Worker			
Wife			
Father			
Mother			
Son			
Daughter			
Brother			
Sister			
Others, etc			

12. How often do you visit home ?
13. Time of the last visit Reason.

Number of days spent on the way.
Means of travelling.
Travelling expenses for a round trip. ....$
Any danger occurred on the way ?
Number of days spent at home.

II. 14. Income
Monthly wages ....$
Salt bonus for the last 12 months ....$
General bonus ....$
Other incomes......................................$
Total annual income ....$
Average monthly income.............................$
Average daily income ....$

III. 15. Amount of borrowing during the last 12 months ...$.
Reason for borrowing.
From whom or what sources ?
Rate of interest.
Means and terms for paying back the loan.

16. Articles pawned during the last 12 months.
Value of the articles pawned. ....$
Reason for pawning articles.

17. Do you join any loan society ?
If so, state the organization and general features.

IV. 18. Number of meals per day.

19. Expense for each meal.
Breakfast..$
Lunch ....$
Supper...$
Total food expenses per day ....$
Total monthly food expenses ....$
Total annual food expenses ....$

20. Percentage of expenses for the five principal kinds of food:
Wheat bread.
Corn bread.
Millet porridge.
Fried fritters.

Others.

21. Refreshment expenses per month ....$
Refreshment expenses per year ....$

22. Clothing expenses for the last 12 months.
Dress ....$ Socks..............$
Hat ....$ Others ....$
Shoes ....$ Total..............$

23. Expenses of the following for the last 12 months:
Tea ....$
Tobacco ....$
Soap ....$
Utensils (specify utensils bought) ....$
Haircut ....$
Amusement ....$
Entertainment ....$
Postage ....$
New year ....$
Others ....$

24. Total annual expenditure. ....$
Average expenditure per month. ....$
Average expenditure per day......................$

V 25. Average amount of savings each year. ....$

26. Remittance to home during the last 12 month.$

VI 27. Number of haricuts in 12 months.

28. Number of baths taken in 12 months.

39. Do you play any musical instrument ?

30. Do you play any games ?

31. Are you able to read ?
Are you able to read "pai-hua" newspaper ?

32. Where did you receive your education ?

33. Do you worship God ? If so, what ?

34. Do you plan to have family with you ? (if married)
Do you plan to get married ? (if not yet married)

35. How much is your savings ?
Where do you invest it ?
How are you going to use it ?

36. How do you spend your leisure ?
37. List your family properties and estimate their value.

B. SCHEDULE FOR THE INVESTIGATION OF WORKERS' FAMILIES

Schedule No.
Name of investigator
Date of investigation
Name of factory
Type of factory.

I. 1. Name of workes. Registered number in factory.
Birth place Province District
2. Length of employment in the factory.
3. Through whose introduction?
4. Kind of work engaged in at the factory.
5. Do you have work at other places besides the factory work?
6. Occupation previous to joining the factory?
7. Why discontinued?
8. How long has your family been here? From where?
9. Number of persons living in family. (Mark × on those who are not living with the family.)

	age	occupation	age of marriage
Worker			
Wife			
Son			
Daughter			
Father			
Mother			
Brother			
Sister			
Others etc.			

II. 10. Income of worker
Monthly wage .... $
Salt bonus for the last 12 months .... $
General bonus .... $
Other incomes .... $
Total annual income .... $

11. Incomes of other members of family for the last months .... $
12. Total annual income of the family .... $
Average monthly income .... $
Average daily income .... $
13. List family properties and estimate their value. (if the properties are jointly owned with relatives, state so.)
14. Amount of borrowing during the last 12 months $
Reason for borrowing.
From whom or what source?
Rate of interest.
Means and terms for paying back the loan.
15. Articles pawned during the last 12 months.
Value of the articles pawned .... $
Reason for pawning articles
16. Average amount of family savings in a year? ... $
How much savings have you accumulated so far? .... $
Where is it invested?
How are you going to use it?
17. How much more income do you need in order to make living comfortable?
18. How would you spend it if $30 is added to your income?
19. Is there any person in the family who belongs to a loan society?
If so, describe its organization and general features.

III 20. How many persons are eating at home?
Average monthly expenditure for the following items of food.
Flour ....$
(how much is purchased by meal tickets?)
Vegetables ....$
Meat ... .$
Refreshment ....$
Others ....$
Total of the above ....$

Total annual expenditure for food.................$

21. Monthly rent.........$ Yearly rent ....$

22. If house is owned, estimate annual expenses for repairing. ....$

23. Monthly expenditure for coal.

Cold seasons (autumn and winter)...............$

Warm seasons (spring and summer) ....$

Total annual expenditure for coal ....$

Monthly expenditure for reeds.

Cold seasons (autumn and winter) .... $

Warm seasons (spring and summer) ....$

Total annual expediture for reeds ....$

Total annual expenditure for fuel. ....$

24. Monthly expenses for light.

Cold seasons (autumn and winter)...............$

Warm seasons (spring and summer) ....$

Total annual expenditure for light ....$

25. Clothing expenses for each person in the family during the last 12 months ....$

Total expenses of all persons...........................$

26. Bedding expenses for the last 12 months ....$

27. Expenses for the following during the last 12 months:

Tea ....$

Soap ....$

Untensils ....$

Transportation....................................$

Postage ....$

Haircut (state expense for each haircut) ......$

Baths (for how many persons) ....$

Doctor's fee and medicine ....$

Tooth-brush and tooth powder ....$

Woman's toilet articles ....$

Wedding (state the person) ....$

Funeral (state who is deceased)..................$

New year (specify items) ....$

Social intercourse ....$
Education (for whom)...........................$
Religious worship (specify the cost of "paper money" and tin foils). ....$
Total of the above ....$

28. Cigarette smokers in the family.
Quantity and cost of cigarette comsumption per person per day.
Annual quantity and cost of cigarette consumption.
Chinese tobacco consumption.
Quantity and cost of Chinesetobacco consumption per person per day ?
Annual quantity and cost of tobacco consumption.
Total annual expense for tobacco and cigarettes in the family ....$

29. Members drinking wine or liquor in the family, state quantity and expenses for each time.
Total annual quantity and expenditure for wine....$

30. Amusement and recreation expenses for the last 12 months. ....$
Total expenses for the family.......................$

31. Total annual expenditure for the family. ....$
Average monthly expenditure for the family......$
Average daily expenditure for the family..........$

32. Number of rooms in the house.

33. Does the house leak ?

34. Number of *kangs* in the house.
Number of persons share them.
Number of bedsteads in the house.
How many persons share them ?

35. Time schedule for meals.

36. Kind of alcoholic drinks consumed in the family.

37. Has any person in the family been sick during the last 12 months ?
If so, state disease and length of time being sick.
How long has the worker not been working on account of

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sickness?
Where was it cured?
Any Chinese medicine used?

38. Number of persons vaccinated in the family.
Number of persons not vaccinated in the family.
Number of women having bound feet.
Number of women having natural feet.
Number of girls having bound feet.
Number of girls having natural feet.

39. Presence of the following in the family:
Defective, Idiot Insane.

40. Number of baths taken by the worker in a month?
Summer.
Winter.
Place for taking bath.

41. How many members of the family are able to read?
How many members of the family are able to read "pai-hua," newspaper?

42. How many members of the family are receiving education?
Where and what grade?

43. What gods are worshipped?
How often are worshipping ceremonies held?

44. How does the worker spend his leisure hours?
How do the women spend their leisure hours?